H P Kinney

THE KING OF BEASTS

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The Book of Knowledge

The Children's Encyclopædia

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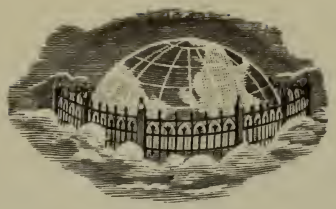

CONTENTS OF THIS VOLUME

This is a short guide only to the principal contents of this volume. It is not possible to give the titles of all the Poems and Rhymes, Legends, Problems, colour pages, questions in the Wonder Book, and many other things that come into the volume; but in all cases are given the pages where these parts of our book begin. The full list of these things comes into the big index to the whole work.

PAGE

THE BOOK OF THE EARTH
- The Wonderful Keyboard . . . 5173
- Nature's Great Mysteries . . . 5253

THE BOOK OF THE UNITED STATES
- Upper New York 5179
- How Peary Found the Pole . . . 5211
- Helen Keller 5285

THE BOOK OF FAMILIAR THINGS
- Earth's Hidden Treasure . . . 5297
- How We Guard Our Treasures . . 5371
- Making the Desert Blossom . . . 5399
- Wonderful Unseen Worker . . . 5471

THE BOOK OF WONDER
- Must All Things End? 5247
- What Makes a Rocket Go Up into the Sky? 5249
- Why Can Some Waters Petrify Wood? 5250
- Can People Tell Our Fortunes? . . 5251
- Do a Horse's Eyes Magnify? . . 5381
- How Can a Newspaper Be Made for a Penny? 5382
- Is There a World Beyond Our Senses? 5385
- Do the Stars Really Twinkle? . . 5483
- What Is Fatalism? 5484
- Why Does Elastic Stretch? . . . 5486

See index for full list of questions

THE BOOK OF NATURE
- Flowers of the Seaside 5185
- Flowers of the Garden 5269
- How Animals Talk to Each Other . 5323
- Homes Not Made with Hands . . 5411
- American Trees in Winter . . . 5437
- Life of Young Animals 5477

THE BOOK OF MEN AND WOMEN
- Writers of Other Lands . . . 5217
- Chatterton, the Wonderful Boy . . 5317
- Peasant Girl and Empress . . . 5321
- Sir Walter Raleigh 5393
- Two Men I Honor 5398
- Mrs. Hemans, the Children's Poet . 5468
- William Postel, the Boy Who Meant It 5470

THE BOOK OF OUR OWN LIFE
- Our Lives and the Nation . . . 5281

PAGE

THE BOOK OF CANADA
- Winter Sports in Canada . . . 5209
- Schools and Schoolmen in Canada . 5233
- New West 5365
- Poetry of Canada 5387
- Picturesque St. Lawrence . . . 5425
- Canadian Scenes 5429

THE BOOK OF GOLDEN DEEDS
- The Flight in the Moonlight . . 5223
- The Woman Who Sold Her Shawl . 5224
- How Lady Godiva Helped Her People 5386

THE STORY OF FAMOUS BOOKS
- Ben Hur 5225
- English Children in the Olden Time . 5359
- King Henry V. 5360
- Les Misérables 5362
- Marble Faun 5432

THE BOOK OF STORIES
- The Last Will of Charles Lounsbery 5203
- The Music of the Willing Heart . . 5204
- Fables of Æsop, the Slave . . . 5205
- The World on a Table 5206
- The Little Man and the Drums . . 5207
- Gelert, the Faithful Dog . . . 5208
- Mexican Legends 5231
- Stories of Victor Hugo . . . 5305
- Man Who Knocked at the Gates . . 5307
- Stories Told in the Middle Ages . 5308
- Howleglass, the Merry Jester . . 5309
- Adventures of Reynard the Fox . . 5310
- Stories Told in the Old English Schools 5312
- The Farmer and His Dog . . . 5313
- The Burial of a City 5314
- Proserpine, Queen of the Underworld 5316
- The Lonely Old Woman of Morocco . 5316
- The Tiger Woman of the Jungle . 5316
- The Giant's Plaything 5341
- The Wind Sings Down the Chimney . 5342
- Stories from the Chinese . . . 5344
- The Rosy Apple 5345
- The King Who Could Not Sleep . . 5347
- The Love that Was Worth Nothing . 5348
- Stories Told to Kaffir Children . . 5349
- Little Spinner at the Window . . 5419
- Stories Told in India 3,000 Years Ago 5421
- Tale of Jenny Martin 5422
- Peasant and the Three Robbers . . 5424

PAGE

STORIES IN FRENCH

Le Malin Fermier et le Nain . . 5208

THE BOOK OF POETRY

The Cloud 5239
The Better Land 5240
The King's Picture 5240
Planting the Apple-Tree . . . 5240
Rain in Summer 5241
Somebody's Mother 5241
An Indian at the Burial-Place of His Fathers 5242
The Flight of Youth 5242
Quiet Work 5242
It Is Common 5243
All the Children 5243
A Story of Life 5243
A Vision of the Future . . . 5243
Gentle Jesus, Meek and Mild . . 5243
The Apple Winds 5244
Life 5244
I Think When I Read 5244
Sad Ventures 5244
God Save the King 5244
Only a Boy 5374
The Bailiff's Daughter 5374
Time 5374
Envoy 5374
Sound the Loud Timbrel . . . 5376
Piping Down the Valleys Wild . . 5376
Heraclitus 5376
Massa's in the Cold, Cold Ground . 5376
The Man Who Was Twelve Years Old 5377
Four Things 5377
The Sleep 5377
Marco Bozzaris 5377
Eve of Waterloo 5378
Bivouac of the Dead 5379
The Sun Was Falling Off to Sleep . 5380
On Sir Philip Sidney 5487
Child's Wish in June 5488
The Dust 5488
A Hundred Years to Come . . . 5488
Better Things 5488
Love's Reasoning 5489
Two Men 5489
Why It Was Cold in May . . . 5489
The Poet and the Bird 5489
What Does It Matter? 5489
To a Skylark 5490
Rain on the Roof 5490
Now the Day Is Over 5490
My Lady Wind 5491
Teeny-Weeny 5492
Little Verses 5245

THE BOOK OF ALL COUNTRIES

The Grandeur that Was Rome . . 5259
A First Holiday in Paris . . . 5331
A Month in Ireland 5459

PAGE

THINGS TO MAKE AND TO DO

HOW TO BE YOUR OWN MAGICIAN

How To Move a Penny Without Touching It 5453

MISCELLANEOUS

Fancy Dresses that Cost Nothing . 5194
A Fancy Dress Tea Party . . . 5195
The Adjective Letter 5196
The Game of Oranges and Lemons . 5196
How to Know the Rocks . . . 5197
A Dainty Muslin Window Curtain . 5198
A Button Made from a Shoe-Lace . 5199
Making a Collection of Woods . . 5200
Throwing Shadows on the Wall . 5201
Proverb Games for the Fireside . . 5202
Our National Game 5287
How To Talk to the Deaf and Dumb 5291
The Game of "What Is Wrong?" . 5292
How To Read the Mariner's Compass 5292
Making a Fretwork Bracket . . 5293
A Camera that Costs a Penny . . 5294
A Box that Draws Voice Pictures . 5295
Measuring the Height of a Tree . 5295
A Home for the Birds 5351
How To Make a Braid Lace Collar . 5352
Two Ways of Splicing a Stick . . 5353
The Bear and the Little Wolf, *a Play* 5354
How To Keep a History Notebook . 5356
Finding the Way into the Maze . . 5358
A Barometer Made at Home . . 5447
Game of Making Rhymes . . . 5448
Musical Instrument from Old Bottles 5448
Dainty Afternoon Tea-Cloth . . 5449
Cutting an Apple Inside Without Peeling It 5449
A Card that Helps Us Make Designs . 5450
What To Do with a Bundle of Straw 5451
How To Draw a Picture with 12 Lines and a Dot 5454
Making Spinning Pictures . . . 5455
Making a Basket of Raffia Work . 5456
Twenty-Five Ways of Saying the Same Thing 5457

PROBLEMS

What Are These Plants? . . . 5202
The Puzzle of the Mysterious Square 5202
Puzzles of the Wizard King 5357, 5452
Game of What It Is 5457
What Games Do These Pictures Represent? 5458

THE BOOK OF SCHOOL LESSONS

FRENCH

Fables of Æsop in French . . . 5238
Picture Lesson 5392

COLORED PLATE

Tweedledum and Tweedledee . . 5380

WHAT THIS STORY TELLS US

LIKE ordinary air or water, the ether can be thrown into waves, and these waves, though they all travel onward at the same rate, may be more numerous or less numerous in every second of time. In the case of the air waves of ordinary sound we find the same thing, and so we may have a keyboard for sound waves, varying in the number of waves that are made in a second. So, also, we may imagine a keyboard of the ether, and if we could play upon it we should find that the lowest, or "bass," notes, with comparatively few waves in each second, would be electric waves; higher up would be heat waves; higher still the waves of light, from red light up to violet light; and somewhere higher still, probably, the waves we call the Rontgen rays. In this keyboard of the ether sound has no place, for its waves are never in the ether, but always in ordinary material things, like air or water. Only we find many parallels between sound waves and ether waves, simply because the great, unalterable laws of wave-motion apply equally to both.

THE WONDERFUL KEYBOARD

THE INVISIBLE WAVES THAT GIVE US LIGHT AND COLOUR

CONTINUED FROM 5044

LIGHT consists of waves in the ether, and we know that the movement of these waves makes them quite different from the waves of sound. A sound wave is a kind of push-and-pull wave, moving in the line in which the wave of sound is travelling; but, on the other hand, waves of light move sideways at right angles to the path in which the light is travelling. In ordinary light the waves move just as much from side to side as up and down; but, as we can understand, it is quite possible that we might have light in which the waves were all up and down, or all from side to side, and of no other kind. It might be possible to sift out from a beam of ordinary light all the rays except those travelling from side to side at a particular angle.

This can actually be done. When light passes through certain kinds of crystals which seem quite transparent, most of the waves are really kept back, and only those moving in a certain direction are allowed to go on.

This remarkable fact has the extremely bad name of *polarisation*. Even the light from the sky is more or less polarised, for the waves are not equal in amount in all directions. If we make a sort of star-shaped picture on a piece of paper, with ever so many lines all crossing one another at a centre, then the movement of that star up or down from the paper would be like the movement of a ray of light, and the lines would represent some of the endless number of directions of the waves that make up the light.

Now, we can understand that if a thing like this star were travelling in a certain direction, it might come to some obstacle with a slit in it at a certain angle, say, straight up and down; then all the waves, except those that happened to run up and down, would be stopped, but the up-and-down waves would travel on through the slit, and would form a ray of polarised light. The eye could distinguish no difference in it, but by other means we could prove the difference. We must not suppose that any real slit can behave like this to light, but it merely gives us a sort of picture of the kind of thing that must happen when light is polarised.

Ordinary light from the sky is polarised to a certain extent, but the best instance of polarisation is when light travels through a crystal of Iceland spar, about which there is nothing peculiar to the eye; and yet, though it looks quite transparent, it is really quite opaque to all waves of light

except those that just happen to lie at one particular angle to the crystal. In many respects the laws of all waves are the same, but if we once realise the great difference between waves of sound and waves of light as regards the direction of the wave-motion in the two cases, we shall see that the polarisation of light is a thing quite peculiar to waves of this kind. The to-and-fro, push-and-pull kind of waves that make sound could not be polarised.

THINGS THAT LOOK TRANSPARENT BUT WILL NOT LET THE LIGHT THROUGH

When light is polarised, it will pass through things that look transparent only under certain conditions. For instance, if it has been through one crystal of Iceland spar, it will pass through another, provided that the line of the second crystal is in line with the first; but if the second crystal is twisted a little, the light will not get through it.

It is as if a tall man were walking through a narrow door, and, of course, he could walk through any number of such doors, one after the other; but if he came to a door the slit of which, instead of running up and down, ran from side to side, he could not walk through that. That gives us an idea of the kind of thing that happens when a ray of polarised light is stopped by what looks like a perfectly transparent crystal.

We know that in the case of sound there is a thing called pitch. The piano has different notes running in a regular way from low tones to high tones. We also know that the pitch of these notes depends upon the number of waves that are made in a second, and when the number of waves is twice as great for one note as for another, the note with twice the number is an octave higher.

THE WAVES THAT MAKE SOUND AND THE WAVES THAT MAKE LIGHT

A piano usually consists of seven octaves, with perhaps three notes added. It would not need to be much bigger in order to extend in both directions beyond the limits of our hearing, because about eleven octaves is the outside limit of hearing even for young ears. It is good to remind ourselves of all this because it is easy to understand, and because it helps us greatly to understand many facts about light and colour.

If light is made of ether waves, the number of waves can vary just as in the case of sound, and we might expect this to mean that light has pitch, just as sound has. Indeed, this is so, though the number of waves made in a second by light happens to be millions of times greater than in the case of sound. Of course, just as in the case of sound, the number of waves may be much more numerous in one instance than in another — even twice as many; and then we shall have a kind of light the pitch of which is, so to speak, just an octave higher than in the other case. This might go on in both directions; and so, indeed, it does, but the interesting thing is, that though the ear can hear about eleven octaves of sound, the eye can see only just about one octave of light.

The natural question to ask is: What fact of light corresponds to the differences in the pitch of sound? And the answer is the wonderful fact of colour.

THE DIFFERENCES IN LIGHT THAT WE CALL COLOUR

The colour of light is its pitch, and as we follow the colours of the spectrum, about which we read on page 5041, from red to violet, it is as if we were listening to someone playing an octave on the piano. Now, in the case of sound, we know that many notes really consist of more than one note, though it is possible, of course, to have notes made up of waves all occurring at the same rate. A tuning-fork produces such a note, but the violin, or a piano string, or the human voice, produces a note made up of a mixture of different pitches.

Now, in just the same way, it is possible to have light which is all made up of waves of one pitch, or light which is made up of any kind of mixture of waves of different pitches. Different colours vary very much as to the variety of waves of different pitch that they are made up of, and the eye usually takes these facts into consideration when it likes or dislikes certain colours.

Let us, then, remember that colour is the pitch of light, just as we may say that pitch is the colour of sound.

We know that when we look at the spectrum, though the various colours pass gradually one into another, yet we see there a small, definite number of

certain colours which we can name and number. We must clearly understand, however, that this appearance is only due to the particular way in which our minds happen to be made. Colour really depends on the number of waves in a second; and, within the limits of our seeing, the exact number of waves produced in a second may be anything whatever, and every one of these rates really means, if only our eyes could see it, light of another colour. There are thus actually countless millions of colours, though our eyes see so few.

THE LONG WAVES THAT MAKE RED LIGHT AND SHORT WAVES THAT MAKE VIOLET

Just as the number of waves made in a second varies, so also does the size of the waves. The proper name for the size of waves is wave-length, and the rule is that the longer the wave-length the fewer is the number of waves that occur in each second, and the shorter the wave-length the more frequent are the waves. Of the light that we can see, therefore, the dullest—a red that is almost invisible—has the smallest number of waves in a second and the longest wave-length; while the violet is made up of the quickest waves, which have the shortest wave-length.

Of course, we must not confuse the number of waves in a second with the rate at which the light is travelling. A tall man with very long legs and a boy with short legs may be running side by side at exactly the same rate, but the boy may be taking three strides to the man's one. In rather the same way, all the kinds of light travel at the same rate, but the waves of violet light correspond to the boy's short, quick strides, and the waves of red light to the long, slow strides of the man.

WHY THE CAMERA CAN SEE THINGS THAT THE EYE CANNOT SEE

The study of the wave-length of light is very interesting because it bears on the question as to how small are the things that we can see. The size of the wave-lengths of light is so small that tens of thousands of light waves could be put side by side within an inch. Now, when it comes to trying to see very tiny things with the microscope, the question of the wave-length of the light we are using is very important. The shorter the wave-length, the nearer together may two points be which, seen by such light, will be seen separately. But they may be so near that if afterwards looked at by light of longer wave-length they cannot be seen separately, but are seen only as one thing. So, other things being equal, it may make all the difference to what we see whether we are seeing objects by means of yellow light with rather long wave-length, or by means of blue light with much shorter wave-length.

The trouble here is that our eyes are more sensitive to the rays of longer wave-length, which are, for that reason, so much the worse for seeing tiny things by. Of the plate of a camera, however, just the reverse is the case. It is much more affected by waves of short wave-length than by those of long wave-length. So, where our eyes fail, the camera can, to a certain extent, be used together with the microscope, to see, by means of violet light, things so tiny that they could be seen in no other way.

THE STRANGE EFFECTS OF THE WONDERFUL RONTGEN RAYS

Everyone has heard of the X-rays, often called the Röntgen rays, after their discoverer, Professor Röntgen. He himself called them the X-rays, because X is usually used in algebra to mean something unknown, and he did not know what these waves were. It is probable, however, though not yet certain, that the rays are really light of a very shrill pitch, so to speak, perhaps several octaves above the violet.

We do not yet know how many waves in a second make up X-rays, nor do we know the length of the waves. It is said that some people can faintly see the Röntgen rays. At any rate, it was a very great mistake to suppose that all Röntgen rays were the same—for, indeed, various kinds of Röntgen rays differ very greatly, probably quite as much as red light differs from violet light, and very likely for just the same reason.

At first the X-rays were a curiosity; then they became useful because, when they were passed through the body, different parts of the body threw shadows which often gave very valuable information to the doctor; and then, later still, it was found that the X-rays produced very marked and wonderful effects upon living creatures, including ourselves. Of course, when this was learnt, it became very important to study the rays—to find out all the

different possible kinds of them, and to learn exactly how they differ in their effects upon the human body.

Below the red rays there are, as we know, the rays of radiant heat. These also vary very widely, just as the rays of visible light do; and a great American student of the subject has made wonderful discoveries about them. These rays cannot be seen, and when rays cannot be seen they can only be studied in some other way. They can be studied, for instance, by means of the heat they produce; and so this man of science invented a marvellously delicate instrument, which is really nothing more or less than a thermometer, but vastly more delicate than the best of ordinary thermometers. By means of this instrument he has been able to study heat waves in detail, and he has shown that they differ from each other, and, indeed, make up a long spectrum just like the spectrum of visible light.

The one is, of course, a continuation of the other. This spectrum, too, contains lines and places which correspond to the dark lines that can be seen in the spectrum of visible light.

THE KEYBOARD OF INVISIBLE WAVES THAT GIVE US LIGHT AND ELECTRICITY

This wonderful keyboard of waves in the ether extends still farther below the heat rays. The lower waves are slower and bigger. We know them best by their electrical properties, for they are electric waves—the waves that run in the ether inside the wire of a telegraph or telephone, and the waves, needing no wire, which are used in wireless telegraphy. It is extremely important and useful for us to understand that simply by moving down the keyboard, so to speak, from visible light we come to the waves that make an electric current.

Now, this can only mean that light and electricity are as like each other as the sounds produced by the middle octave of a piano and the sounds produced by the notes near the bottom of the piano. We rightly use the one word, sound, to describe both of these things, for they are really the same. We might say, then, that electric waves are really light waves which we cannot see, but this is not the best way of putting it. The best way of describing them is to speak of the electric theory, or the electro-magnetic theory, of light. This theory simply means that light is a kind of electricity. All these waves in the ether, that travel at the same enormous speed, are really of one and the same kind, and the only word that describes them is the word electric.

THE LIGHT WAVES THAT EXCITE OUR EYES AND THE WAVES THAT EXCITE OUR SKIN

It so happens that we possess in our bodies eyes which have the power of being excited by about one octave of these electric waves; and to that octave we give the name of light. It is really electricity. Other electric waves which happen to be longer, and of which fewer happen to be made in a second, affect us in a different way. They do not excite our eyes, but they excite our skin and perhaps make us jump.

Electric waves, including the waves of light, move in straight lines, all of them at a known speed. Just as in the case of sound, or the power of gravitation, or the power of magnetism, the intensity of light gets less very quickly as we pass away from the place where it is made. The rule is that at twice the distance it has one-fourth the intensity; at three times the distance one-ninth the intensity, and so on. In other words, the intensity of light, like the intensity of all these other things, varies inversely as the square of the distance.

As in the case of radiant heat, some substances will let light through, and others will soak it up or absorb it, and others will reflect it from their surface. No one can yet explain what are the differences in different kinds of substances which make them behave toward light in these different ways. Of some things, however, we can be certain.

HOW LIGHT IS LOST BY BEING CHANGED INTO HEAT

One is that when light is absorbed it is not destroyed, for we know that nothing is ever destroyed. What eternally happens everywhere, inside our bodies and in the great world, is not destruction, but transformation; and in this case the light is transformed into heat. That is only another way of saying what we all know so well—that things which the sun shines upon become hot, especially if they are dark things. We know, also, that when substances let light through them, the

light waves travel through the ether in the substance in question—as, for instance, through a pane of glass. But however transparent a thing is, it does not let through all the light that comes to it. This is true of a pane of glass, however polished and smooth, and it is true of the beautiful front parts of our eyes.

WHY WE CAN SEE OUR FACES IN THE WINDOW OF A RAILWAY TRAIN

The proof that these things are not quite transparent is plain, because, if we go about it in the right way, we can always see little reflections from a pane of glass, as when a train is in a tunnel, or from the surface of other people's eyes. These reflections mean that light has been reflected to our eyes, and therefore that the thing is not quite transparent.

Although we do not know why one thing reflects and another does not, we can learn the laws of reflection. These laws really hold good, not only for light, but for radiant heat and for sound; and everyone who has played billiards or pool, or who has thrown an indiarubber ball against a wall, knows something of the laws of reflection.

We know that if we throw a ball straight at a wall, it comes straight back to us; if we throw it sideways, it goes sideways, and it comes off just as much sideways as it was thrown sideways. If a ball on a billiard-table is rolled gently against the cushion at an angle, it will come off again at the same angle. The angle at which the ball approaches the cushion is called *the angle of incidence*, and the law for the billiard-ball, for light, and for all these other cases is that the angle of incidence and the angle of reflection are equal.

HOW THE EYE AND THE MAGIC LANTERN ALTER THE COURSE OF LIGHT

There is another thing which happens to light, as it does also to radiant heat and to sound, and it is called *refraction*. We must always distinguish this word from reflection, which means bending back; but refraction really means breaking back. When a ray of light passes from one thing to another, it is always broken, or refracted, and this refraction also has laws. It is extremely important, for we are able to see things only by means of refraction. The whole of the front part of the eye is really a wonderful piece of machinery for refracting the rays of light that come in so that they shall all be made to fall on the retina, or curtain, at the back of the eye, in such a way as to produce a clear image of the thing we are looking at. Eyeglasses of every kind are used for the same purpose. The use of them all, and of every kind of microscope and telescope, the glasses in front of a magic lantern, and so forth, is due to their power of refracting the rays of light.

Different things have different powers of refracting light. The diamond, for instance, alters the course of the rays of light passing through it much more than water does, this being the reason why the diamond is such a brilliant gem.

But the rays of light themselves differ in their power of being refracted; and refraction is the key to Newton's great experiment, shown on page 1663. His prism was simply a means for refracting the rays of light passing through it, and the success of his experiment depended on the fact that the different kinds of light are refracted each to a different degree in a regular way. The existence of the spectrum depends entirely upon the possibility of refraction.

WHY WE NEVER SEE THE STARS EXACTLY WHERE THEY ARE

If we ask why rays of light are refracted when they pass from one thing to another, a partial explanation can be given. It is that the speed of the light waves is slightly altered when they travel through a different substance, and the different waves are differently affected. The simple rule is that the denser the subject through which the light is passing, the more it is retarded.

When the light travelling through empty space reaches our air, it is very slightly retarded and bent. A consequence of this refraction produced by the air is that we see no heavenly body where it really is, but at some spot a little distance away; and we can actually see the sun when it is below the horizon because the rays are refracted as they pass through the air. When passing from air to water, light is refracted yet more, and the explanation of the facts is that light waves travel slightly slower through water than through air because water is denser than air.

We have seen how refraction produces colour by splitting up white light. But there is a way in which reflection also

produces colour, and practically all the colour of the world is produced by reflection. It is true that sunlight has its own glorious colour, for though we call it white light, it is really rather golden; and it is true, also, that luminous things, like flames and fires, have colours of their own, because the light they produce has a high proportion of red or yellow or green or violet rays. But, apart from that, the earth and the things upon it have colours, though they are not themselves luminous; and these colours are produced by reflection from the white light that falls on them.

This reflection of theirs is *selective*, as we might say. A white thing does not select; it is white just because it does not select, but reflects all the waves of light which happen to fall upon it. Not being luminious, it makes and creates nothing, but it will simply reflect whatever light falls upon it. If we throw red light upon it, it will be red; if we throw upon it the mixture of lights called white, it will be white. This is the great difference between the things that are not luminous and the things that are.

We have only to think a little to see what a huge and difficult subject light must be. Such a thing as sound is simplicity itself in comparison, though, as both are made of waves, they have certain laws in common. After all, sound is made of waves in matter, and in studying it we do not have to go outside what we know of matter, though, of course, that is little enough. But light consists of waves in the ether, and yet it is made by matter; it can be reflected and refracted by matter, and matter can choose different parts of it to refract in different ways, parts of it to reflect, and parts of it to absorb. Even transparent matter, as in the case of coloured glass, will absorb certain kinds of light, and will let other kinds through; so that not only are we dealing with something in the ether about which very little is known, but at every stage we are met with questions of the relations between this ether and ordinary matter.

All these questions have yet to be answered, and they must occupy science for ages to come.

There is another great department of the study of light about which huge books have to be written. It deals simply with rays of light and the laws of their bending. This requires a great deal of mathematics, and is called *mathematical optics*. To this subject, also, there is no end, and it is very important, because it underlies everything that we do and shall do with microscopes and telescopes and all the other different kinds of optical instruments.

In this picture we see the remarkable property of double refraction possessed by Iceland spar, which causes the letters on the card at the back to appear twice when seen through the crystal. If the spar is tilted at a certain angle it becomes opaque, so that we cannot see through it. This is shown by the ends of the crystal in the picture.

And men have still, moreover, to study the great discovery of our own times, that light is really electric, which means that we cannot really understand it unless we study all kinds of electric waves. Every fact we learn about light is a fact of electricity, and every fact we learn about electricity helps us about light. There is no discovery for which Great Britain will be more certain to be celebrated than the discovery that the light which fills the universe is a kind of electricity and magnetism.

The next part of this is on page 5253.

A VISIT TO UPPER NEW YORK

In our last story of our visit to New York, we progressed as far uptown as Madison Square. To-day we shall go as far as Grant's Tomb. From 23rd Street we take the 'bus up Fifth Avenue, the most interesting of all the New York streets, especially in the afternoon when the sidewalks are filled with crowds of foot-passengers and the roadways with carriages and automobiles.

Like Broadway between 18th and 23rd Streets, the crowd on this portion of Fifth Avenue is thoroughly cosmopolitan. "Group succeeds group hurrying by, and no two of them quite alike in any respect. Girls, troops of girls, in grays, in browns, in blues, green, pinks and mauves, quite unconscious of everything but their own talk, old women in silks and bombazines, butlers and haberdashery clerks and men-milliners somewhat puffed up with their own importance; old clubmen with white waistcoats and top hats; fat people with apoplectic faces; shop keepers and agents and salesmen in stripes and checks; churchmen in clerical garb; nuns in black; emigrants in caps, staring round them with a wild surmise, — all move and intermingle in the currents. And with them, pushing against them, running into them, are messenger boys and bundle carriers, and sometimes schoolboys on roller-skates to add to the confusion. The street from gutter to gutter is just as full of vehicles as the sidewalks are of moving people. Carriages and automobiles of all sorts crowd along in processional line. Policemen, mounted or standing, are on the centre of crowded cross-streets to hold up the line of carriages for a moment and allow a stream of foot-passengers to pass over. But as a rule everyone does his own scrambling, keeps from under the horses' feet, and gets about or across as best he can."

Fifth Avenue, between 23rd and 42nd Street has become commercialised. The better class of shops is moving from Broadway on to Fifth Avenue, and those which cannot afford the enormous rentals are crowding into the uptown side streets as near to the Avenue as possible. There is a break in the line of store windows at 34th Street, where the Waldorf-Astoria still holds sway, and further uptown, at 42nd Street, with the beautiful new Public Library. The imposing Catholic Cathedral of St. Patrick, with the row of Vanderbilt houses and the University Club opposite seem to call a temporary halt to the trade line on Fifth Avenue, but in time it will sweep past even these barriers, and the residents between Fiftieth Street and the Park will seek "fresh fields and pastures new" to build their ornate dwellings.

The Plaza at 59th Street, where Central Park begins, is an imposing square, "opening, as it does, upon the Park, and illuminated by the superb statue of Sherman by Saint Gaudens," and faced about by high hotels. Beyond the Plaza the Avenue runs on, Central Park on one side and a long row of over-ornamented stone residences on the other. At 82nd Street in Central Park is the Metropolitan Museum of Art, which is well worth a visit from strangers in the city. In another part of our book in an article on "Some American Painters" can be seen reproductions of a few representative pictures on exhibition in this museum.

At 85th Street we dismount from the 'bus and take the cross town cars through Central Park for the West Side of the city. In this ride through the Park we get little chance to get a real idea of the beauties of the place, with its broad reservoir, with its tangle of roadways, bridle-paths and foot-paths, and its charm of colour in trees

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and vines and flowers. To New Yorkers Central Park is one of the loveliest spots in all the world. And in the early spring, "when the jonquils and Forsythia are in bloom, when the young grass is just starting, and the stems and the buds are reddening along the way, you are quite ready to agree with them. All through the summer there is change and variety in the bloom, and when the winter arrives, the Belvedere, the Mall, the Ramble are still beautiful in their lines even under a mantle of snow."

When we reach the west side of the Park we dismount from the car and take a taxi-cab. "Riverside Drive," we say as we climb in. And the automobile sweeps down to Seventy-second Street and then across to the broad avenue that runs along the east shore of the Hudson River. The river, and the parkway that slopes almost to its edge, burst upon our view with an imposing beauty. The Drive itself, with its ornate residences and tall apartment houses lined up along one side, is almost deserted, except for an occasional nursemaid wheeling a baby carriage, or an automobile that spins past us. Across the glistening blue waters of the river, the Palisades rise tall and majestic.

The simple beauty of the marble tower of the Soldiers and Sailors' Monument rises before us, and then, almost before we know it, we have covered the two miles distance between it and One Hundred and Twenty-third Street, and we are before Grant's Tomb, its pyramidal dome clear-cut against the pale evening sky. We should like to enter the Tomb to pay the tribute of a few minutes' pause before the remains of the great general and his wife, but the sun is rapidly sinking behind the Palisades, so we content ourselves with circling about it, and turn our faces again toward the southern portion of the city.

We ride slowly past the impressive buildings of Columbia University, with its adjuncts of Barnard and Teachers' Colleges, down Amsterdam Avenue, past St. Luke's Hospital, and stop for a moment to view the promise of a great and beautiful structure in the unfinished Cathedral of St. John the Divine.

There are many more places of interest in different parts of New York City which we should like to see if we had the time, such as the College of the City of New York, where one of your editors works, the Little Church Around the Corner, the museums in Bronx Park, and many others. We should like to inspect some of the large shops, as Altman's or Tiffany's, or visit some of the famous dining places of fashion, as Sherry's and Delmonico's; or, perhaps, stroll into some of the poorer, yet absorbingly interesting, quarters of the city, as the Bowery and Chinatown. We should like to do all this, and yet we are going to leave New York by a train from the new Pennsylvania Station at six o'clock.

As we turn our faces toward the heart of the great city, the dusk closes in about us, and the lights begin to spring up from block to block, and the streets stretched out before us become a blazing filigree of light. The elevated overhead "trails a chain of fire," the high apartment houses show a thousand illuminated windows. As we near the heart of the metropolis we find all the show-windows aglow with electric signs, and some of the larger stores have rows of lights running along the edges and cornices, thus outlining the whole building from foundation to roof. Every place of amusement flashes an electric sign and "when to this is added the glitter of the ordinary advertisement signs" from the rooftops and wall spaces, the effect is fairly bewildering. New York at night! all crudenesses, all incongruities hidden — what a city of enchantment she is! Under the glare, the glow and the glimmer of her lights, we begin to realise the great, grappling hold this city gets upon the hearts of her people; and how those who have once lived here, turn away from Paris, from London, from Berlin, and return to her crowded, restless, calling streets with a deep sigh of satisfaction.

"Is she not fair and terrible, O Mother —
City of Titan thews, deep-breasted, colossal-limbed,
Splendid with the spoil of nations, myriad-mooded Manhattan?
Behold, we are hers — she has claimed us; and who has power to withstand her?"

RIVERSIDE DRIVE AND GRANT'S TOMB

Here is a picture of Riverside Drive with its long vistas of trees, and Grant's Tomb, its white dome outlined against the sky. Beyond is the Hudson with the Palisades dim in the distance. You will notice that the Drive is divided into four roadways, two for equestrians and two for carriages. Those travelling uptown keep to one side of the Drive, and those going downtown to the other.

WHERE THE CROWDS GO

In another article we have told you all about the Museum of Natural History, the front view of which you see here. The Museum as it will be when it is completed is on page 4900. Go to the Museum almost any day in the week and you will see troops of school-children being conducted by teachers through its halls.

Here is a picture of the Plaza at Fifty-ninth Street and Fifth Avenue. In the centre we see the beautiful statue of General Sherman by our well-known American sculptor, St. Gaudens. Central Park begins here, and on Sunday afternoons the Square is alive with people. Some of the most fashionable hotels in the city are grouped around the Plaza, and prices for apartments hereabouts range into thousands of dollars.

TWO GREAT EDUCATIONAL CENTRES

Columbia University is one of the oldest institutions of learning in the United States. It was founded as King's College in 1754, and this is the fourth site it has occupied. Even now, with all these immense buildings and many others which you do not see, not all the departments of the University are on this site. Some of them are several miles away. The building in the centre is the library.

This is the new central building of the New York Public Library on Fifth Avenue. In it are the collections formerly in the Astor and the Lenox Libraries, and the endowment left by Samuel J. Tilden will also be used to purchase more books. This library is for reference only and books may not be taken out of the building. The circulating libraries are in different parts of the city

THE SPREADING SEA LAVENDER

There are several kinds of sea lavender that grow on our coasts, but this is the common variety. It is found on muddy shores, and has been much used for its medical properties. The flowers are bluish purple.

THE SEASIDE ASTER

The seaside aster is really a salt-marsh form of the New York aster, with fleshy untoothed leaves and long rays of pale violet, very striking when blooming in masses late in the fall.

THE SEASIDE GOLDENROD

This member of the goldenrod growing near the sea can be recognised by its fleshy, smooth leaves with unbroken edges, and the heavy, shapely flower-heads, with large, golden flowerets.

THE ROCK SAMPHIRE

The fragrant rock samphire, with its thick and fleshy leaves and stems, is used for pickling and makes an excellent relish. Samphire is a corruption of San Pietro, the Italian name, meaning the herb of St. Peter.

THE FLOWERS OF THE SEASIDE

CONTINUED FROM 5038

ALTHOUGH there are many plants that flourish only within a few miles of the sea coast, there are some so fond of sand and salt water that they naturally grow at the water's edge, or in the salt marshes. Some of them, indeed, are half covered by high tides.

Very many of the plants that thus hug the coastwise beaches have one marked trait, whether they grow in the narrow strip of sand and gravel between the sand-dunes and the sea-weed and other jetsam left by the highest waves, or in the ill-smelling, black, salty mud of salt marshes. This is the interesting fact that their foliage, as well, often, as the stem, is very simple in outline, and so glossy and smooth as to feel almost greasy. Many of them are thick, or "fleshy," like the cactus, and some are so swollen as to be quite like cylinders. This is also a characteristic of plants growing on deserts and saline soils, and is a device for securing as small a surface as possible, so as to prevent the precious water in the tissues of the plant from escaping too rapidly through the pores provided for that purpose in the surface of every leaf; for the plant on the sea-beach, as well as that on the desert, must be able to grow in sand so hot that one can hardly step barefooted upon it, and through which such rain water as falls quickly seeps away. Therefore, those plants that have gradually come into the possession of foliage that is able to retain such water as may come to it in the top, are most able to survive in such unfavourable localities in spite of the attacks of the sun and drought.

But these crisp, fat, watery leaves called "succulent" in books, are tempting to browsing animals, and often these plants are tart, or salty to the taste, while others are very thoroughly and wickedly protected with an armour of most surprisingly sharp prickles.

THE SALTWORT

The saltwort is a striking example of both of these traits. It also has another somewhat common characteristic of sand-loving plants, — a long, spindling, taproot from which the reclining branches spread in a great circle, forming a huge rosette on the strand; the foliage, to all outward appearance, being merely swollen, fleshy supports for needle-pointed spines that occupy all the available space. In the axils the

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fruits are crowded, each having quaint wings flaring horizontally from the apex. The saltwort belongs to that great goosefoot family which includes the useful vegetables, spinach and beets, as well as certain maritime plants.

THE GLASSWORT

Not far from the saltwort, in the low grass, where high tides may flood them, stand ranks of a closely related plant, the glasswort. Brittle, smooth, spineless, and to all appearance leafless, they bristle in the green herbage like skeleton plants from which the leaves have all fallen away. As a matter of fact the leaves have been reduced to mere scales on the round, upright branches. In the axils of the upper ones, minute flowers are sunken. In summer the glassworts are green, but as autumn approaches they become brilliant scarlet in colour.

THE SAMPHIRE

The name "samphire," occasionally applied to the glasswort, has been borne much longer by a European plant of rocky shores, a rather quaint umbel-bearer, whose solid stems and leaves become swollen and juicy. In some seaside places it has been so much gathered for making into a pickle that it is no longer to be found. We might think it is a plant without leaves, for it appears to be merely a much branched and twiggy stem with umbels of yellow flowers. As a matter of fact the flowers are white, but are very small, and do not show up so strongly as the yellow pistils and footstalks, and the blue-green leaves are so cut up into slender, fleshy, lobed leaflets as to resemble twigs.

THE ORACHE

To return to our goosefoot family, we find in it the orache, a pot-herb, growing originally on European sea-beaches, and only seldom found in our gardens; and also the fleshy, glaucous sea-blite with three-angled leaves, a bushily branched herb, which grows indifferently on sandy or muddy beaches, or in the salt marshes.

When we leave this family and its queer plants and unattractive flowers we are relieved to discover more showy maritime vegetation. There is, for instance, a pretty European shrub belonging to the oleaster family, which we sometimes include in our shrubberies, but which is not native to our coasts. It has drooping branches covered with egg-shaped or lance-shaped leaves, that are dull green above, and silvery white beneath, and is called the sea buckthorn, or sallow-thorn, some of its branches being short, and ending in long spines. It bears orange-coloured berries, which are tart.

THE TAMARISKS

Still other European shrubs (of a family of the same name) sometimes growing into small trees are the tamarisks, with wand-like pink-flowered branches, and the so-called sea-hollies. One that at home grows on the sand above high water, has a short, thick, branching stem, with broad, roundish leaves that are thick and leathery, and their margins are cut into bold teeth that end in very sharp spines. They are of a gray-green tint, and have the appearance of a "bloom" upon them.

THE MARSHMALLOW

The pretty, furry, marshmallow that is very closely allied to the hollyhock, is sometimes found naturalised in our salt marshes, escaped from cultivation. Its roots contain a sort of gum or mucilage, from which the sweetmeats were originally made.

THE SEA-CAMPION

Another European plant that grows about the cliffs, and on the edges of fields that may be above them, is the sea-campion, which has similar leaves and flowers, but the stems are less erect stems than those of the bladder campion, and the white petals are somewhat broader.

THE SEASIDE CONVOLVULUS

Another plant that we should recognise if we were abroad is the European seaside convolvulus, because its flowers and leaves are similar in shape to those of the field convolvulus, or small bindweed. Its slender stem

THE ORACHE

This common weed of the seashore, where it grows in great abundance, flowers from July to October, and the whole plant has a reddish tinge. The central branch is erect, while the others appear as though beaten down.

THE YELLOW HORNED POPPY

On sandy or chalky beaches the horned poppy is very conspicuous with its large flowers of rich golden yellow. The seed-pods that follow the flowers are very long, and might be mistaken for leafless flower-stems.

THE COMMON TAMARISK

This fine evergreen shrub, with its rose-coloured flowers, has a light, feathery appearance. It is largely used as a hedging in seaside gardens, as it withstands the strong salt winds and protects other plants.

THE JOE PYE-WEED

This great swamp-weed is said to be named for an old Indian, who recommended it for its medicinal virtues. The flaring outline of the stem with leaves and flowers has suggested the name of trumpet-weed.

THE RED BARTSIA

This plant is by no means confined to seaside districts, but grows in waste places and fields all over Britain. The reddish-green leaves and the small pink flowers give the whole plant a reddish appearance.

THE CLOT-BUR

This odd-looking bush has wide-spreading branches, bearing tufts of many-angled velvety leaves, and curious flowers, succeeded by brown fruits covered with hooked prickles.

THE BLUE FLEABANE

Though this plant is not a seaside flower, it may often be seen growing near the sea on such places as old walls and other dry spots. The plant is very much branched and very hairy. It is rare in Europe.

THE GROUND-NUT

There are several plants known by this name, but this tribe belongs to the pea-tribe and furnished food, in the shape of rather large, dark-skinned, squarish tubers, for both the Indians and the early explorers.

THE BAYBERRY

These shrubs are conspicuous as rounded masses of dark-green, aromatic foliage, growing on sand-dunes along the Atlantic coast. Only in winter are the pallid berries apparent on bared twigs.

THE MARSH ELDER

A tall, glossy-leaved plant is the marsh elder, growing in great clumps along the muddy banks of tidal rivers and shores, with green, tassel-like flowers. It has a disagreeable odour like others of the ragweed family.

THE MARSH MALLOW

The common marsh mallow grows on marshes near the sea, and is a mass of blossom in August and September. The flowers are large and rose-pink in colour. The plant was used as a remedy for chest complaints.

THE BEARBERRY

This evergreen creeps over large areas of sandy soil, upholding its waxen, urn-shaped flowers, and large, scarlet berries on slender, woody stems. The tough little spatulate leaves are used in medicine.

runs underground like that of the bindweeds, but is shorter and rarely twines around other plants.

THE HORNED POPPY

On the European sand-dunes, grows the fine horned poppy, with bold, glaucous leaves and rich yellow flowers, three or four inches across, which occasionally occurs in America as a visitor from abroad, springing up in waste places. Instead of its seed-vessels being of the shape of our old red-flowered friend of the cornfields, the horned poppy pod is a slender, curved horn, a foot in length.

THE MILKWORT

The sea milkwort, or black saltwort, is a sea-beach succulent plant of both the Old World and the New, blooming early in summer. It is a member of the Primrose family, and would be more fitly named the sea pimpernel. Though its stems are six or eight inches long, we shall not find them reaching that height above the rock, for they are much inclined to trail or to take a half-erect position. The small, oval, stalkless leaves are in pairs, and each pair is at right angles to the pair above or below it. The flesh-coloured, crimson-dotted flowers are without stalks. It is the bell-shaped calyx that is coloured, for there are no petals.

THE SEA-LAVENDER

In the Plumbago family, very closely related to the primroses, is the dainty sea-pink, or thrift, of both worlds, but found only far north in America; and the sea-lavender, which is very common in our muddy salt marshes. Here, again, we have the fleshy leaves, oblanceolate, large, and spreading in tufts from a thick rootstock. Above them, borne on tall slender scapes, the widely branching flower-heads look like shreds of fog caught on the meadow grasses; for the tiny flowers sit erect in little one-sided spikes on the fragile sprays of the panicle, with hairy, pale-lilac petals and calyces of paper-like sepals. Long after they have ripened their seeds, the flowers still retain their form and some of their colour.

THE SEA-ASTER

Down in the marshes with the sea-lavender several little asters, with slender but fleshy leaves, bloom gaily. Another aster with stiff stems and rigid leaves standing out in all directions springs from the sandy beach, and is topped by large and brilliant lilac flowers. Later than these, however, we find in the salt marshes a fleshy-leaved form of aster, known as the New York aster, which has very pretty blossoms with rays of palest violet.

THE SEASIDE GOLDENROD

Near them, at the edge of the marsh, stand the very handsome seaside goldenrods with stout stems, plentifully furnished with shining, fleshy, smooth-edged leaves. The flowers are unusually large, of a rich golden colour, and bloom on the upper sides of the down-curving sprays of the great panicle. Of course, both of these belong to the Composite family, and so also does the Joe-Pye-weed — a great plant that is common in swamps throughout eastern North America, but is particularly rampant in salt marshes. It grows over six feet high with a strong purplish stem rising through whorls of great, long-pointed, toothed leaves, and branches at the top, thus forming a massive pyramid of dull-purple or old-rose flower-heads, that makes it the most striking plant of the marshes even when in fruit.

THE MARSH-ELDER

The quaint name of the high-water shrub or marsh-elder, gives a broad hint as to where it may be found. In fact its sturdy stems spring up just out of reach of the waves on muddy shores. It keeps its glossy, deeply toothed leaves late in the fall. They are somewhat fleshy, and grow smaller and smaller towards the top, until on the flowering branches they are very slender and short, and from their axils droop little heads of green flowers protected by a cup-like circle of bracts. The shrub has a disagreeable, rank odour, and looks very much like an overgrown ragweed. This is not surprising, for it is a member of the ragweed family. Another member, and one which

THE SEA MILKWORT

Another name for this plant is the black saltwort. It grows in the low rocks that are splashed by the sea and in salt marshes. The pink flowers with tiny crimson dots are succeeded by fruits like those of the primrose.

THE SEA CAMPION

The large white blossoms of the sea campion snow up well against the shingle of the coasts of Europe where it blooms all the summer. It is remarkably like the bladder campion, or white bottle, of the fields and hedges.

THE SEA CONVOLVULUS

The sea convolvulus of Europe is a beautiful plant, with pale rose-coloured flowers, striped with red or yellow, almost as large as the great bindweed's. The blossoms open in the morning and close at evening.

THE SEA HOLLY

The sea holly, with its grey-blue flowers, is also called the sea eryngo. It is a stout, prickly plant, with the appearance of a thistle, although it really belongs to the parsley family. The roots are eaten candied with sugar.

THE SEA BUCKTHORN

The sea buckthorn is a bushy shrub with leafy branches which end in thorns. The leaves grow on short stalks, and are dotted above and silvery underneath. The flowers are green, and the orange-coloured fruit is acid.

THE GLASSWORT

The jointed glasswort, or marsh samphire, is abundant in the salt marshes around our coasts, and is sometimes used for pickling in place of the samphire, some people preferring it. It was formerly used in making glass.

THE PRICKLY SALTWORT

This hairy and much-branched plant, with its striped and angular stem and prickly leaves, rarely grows higher than a foot. It is common on sandy shores, and was once much used in preparing carbonate of soda.

THE SEA BLITE

Like the saltwort and the glasswort, the sea blite yields an impure carbonate of soda, formerly much used in the manufacture of glass. It is common on muddy seashores, and has a reddish hue in winter.

promptly calls attention to its presence, is the beach clot-bur, that has zigzag branches with unshapely, rough green leaves, and firm oval burs clustered in the axils, very completely provided with hooked, hairy prickles, as well as a pair of stout, hooked beaks at one end, by means of which they cling persistently to an animal's coat, or to clothing, thus being transported for some distance, and scattering the seed over a wide territory.

THE BAYBERRY

On the beach, on the sand-dunes, and even far inland, one sees the rounded bushes of bayberry, or wax-berry. Its rigid, dark green, dull, oblong leaves, are resinous and very aromatic, in odour a little like the bay or laurel, as we will discover by crushing them. When the leaves fall, one can see the ripened berries, or drupes, clinging closely to the stems. They look very white, but pick one and scratch it a little. You will find that the whiteness can be scraped off, and that the berry is really dark coloured and very wrinkled, and the white substance that covers the berry lies thick in these creases. It looks like, and is, vegetable wax, which without doubt acts as a waterproof coating and prevents the rain and snow from injuring the berry as it clings to the stem during the winter. This wax was utilised by early colonists, who boiled great quantities of the berries, and made candles from the melted wax that floated to the surface. When blown out the pale-green candles exhaled a delicious spicy fragrance.

THE BEARBERRY

A very widely distributed plant in the colder regions of the northern world, is the bearberry of the Heather family. Although it is quite common inland, it grows very often on the bluffs of the northern sea-coasts, where its creeping stems gradually overgrow large patches of sand for the comfortable ripening of their bunches of scarlet berries, greatly relished by game-birds. The berries and the pale, waxen flower-bells before them, droop close to the earth under the tufted, tough, little spatulate leaves that terminate the trailing branches. The plants have been used for tanning, and not only do they furnish a drug, but when dried were used by Indians as a tobacco to be smoked alone, or added to the ordinary kind, whence the plant is called "kinnikinnik."

THE GROUND-NUT

Still another plant of great value to the Indians was the groundnut. Like the bearberry it is often found far inland, but in moist rather than dry soil. It seems to be particularly prevalent along the coast, just keeping clear of brackish water; and roadside thickets are wreathed with its far-reaching, twining vines, and fairly smothered with its balls of dull-purple and old-rose, pea-like flowers that are curiously twisted and give out a delicious odour of violets. Its chief interest, however, lies in the dusky-skinned squarish tubers that sometimes are as big as pecans, and often lie in strings like the beads of a necklace, separated by slender rootstocks. These were a favourite food of the Redmen, who resorted in parties to the swamps where they could be dug up. They probably tasted not unlike potatoes when boiled.

THE SEAWEEDS

While we are on the shore, we shall, of course, become interested in the seaweeds. As they are not flower-bearers, they scarcely come within the bounds of this article. They are plants that live almost entirely in water, reproducing themselves not by seeds, but by minute pores that cannot be seen without the aid of a microscope. Those which grow attached to the rocks inshore get uncovered at low water for a few hours at a time, and if the tide did not come back soon they would dry up and be killed. These seaweeds have no real roots, for what look like roots are only suckers that hold them fast to the surface of the rock; they never penetrate it, and they draw their food entirely from the water through the surface of their fronds. The large ones attached to the shore rocks have thick, leathery fronds of an olive colour.

THE NEXT STORY OF PLANTS IS ON PAGE 5269.

FANCY DRESSES THAT COST NOTHING

An excellent idea for a winter afternoon is to organise a children's fancy-dress tea-party. The costumes need not cost anything. They should be made up from things found in the house. All the dresses shown in the pictures on this page are made up in this way. On page 86 we read about Valkyries, and in the first picture here we see a Valkyrie, with helmet and breastplate made of cardboard, the armour of the knight in the fourth picture being made of similar material, covered with silver paper from tea-packets. The second picture shows a scarecrow; and in the third we see Santa Claus, with hair and beard of cotton-wool.

In the first of these pictures we see Peter Pan and Wendy, whose costumes are easily made. The children simply take off their shoes and stockings, and put on nightgowns over their ordinary clothes. In the middle picture is a dunce; and it is easy to dress for this character, as all that is needed is a dunce's cap, made out of a sheet of paper. The child in the third picture is Cinderella. All she needs for dress is a soiled overall and a broom.

The boy in the first picture is made up as an ancient Briton. His dress is a perambulator-rug, with a belt o brown paper, and a sword cut out of cardboard. There is really no limit to the number of characters we can represent if we are at all ingenious. The second picture shows Nell Gwynn. A girl from a charity school, as shown in the third picture, generally meets with much applause, and often wins a prize, if prizes are awarded, for the best dress. The last picture shows how a peaceful schoolboy can easily be transformed into a bold, dashing pirate by the addition of a stocking hat, a cardboard sword, and a sash of some coloured material, or even a shawl.

These fancy costumes of a cowboy, a Welsh girl, and a fireman are made up of things found in most homes. The Welsh hat is made of black or brown paper, and the fireman's helmet of cardboard and paint.

A FANCY-DRESS TEA-PARTY

CONTINUED FROM 5114

On dull winter afternoons we are often forced to amuse ourselves indoors instead of in the garden and fields. There are many interesting ways of spending a wet afternoon in the house, and perhaps one of the best is to arrange a fancy-dress tea-party.

When we invite our friends we should not let them know what we intend to do, but should tell them as soon as they arrive in the house. If this is done it will cause much more pleasure and satisfaction all round than if elaborate preparations are made, for the great thing is to spend nothing at all upon the dresses, but to make them up from the everyday materials that are found in the house.

It is really wonderful what striking dresses we can make from curtains and table-covers and similar things, and we can see for ourselves the success of the plan by the pictures above and on page 5194.

When we have decided upon a character, we must begin to look round for materials to enable us to dress for the part. This is where our skill in dressing up will come in, for we must not expect to find the exact thing that is suitable.

One of the great pleasures of a fancy-dress tea-party is the search that takes place for the things we require. It is fine fun to ransack the lumber-room, and hunt in various places for cast-off clothing; but we must be very careful not to do any damage or to go where we are forbidden. Moreover, we must ask permission to wear anything that we may want.

In connection with our fancy-dress tea-party we should offer prizes. This will make the dressing up much more interesting. The prizes need not be expensive, boxes of chocolates, cheap books of poems, or something similar will do very well. Not only should we offer prizes for the two best dresses, but we should also award a prize for the least skilfully made costume. This should be kept a secret until the voting is all over. Then it will come as a great surprise, and create a lot of fun.

Little slips of paper may be handed round to all the guests, who should be asked to record their votes upon them, and drop them into a hat or box. When all have voted, we find out whose dress has received the most votes, and award the owner the first prize, the one who receives the second greatest number of votes getting the second prize, and the one who obtains the fewest votes receiving the consolation prize. If any two competitors secure the same number of votes, it is as well to ask all the competitors to vote again.

Some parts of certain costumes are rather difficult to get, and in such cases we may find that stiff cardboard or brown paper will come in very useful. The dress in the first picture on page 5191 is made entirely from white cardboard and a window curtain. The cardboard breastplate and head-dress have been decorated with a little gold paint that was found in the nursery, and the spear was taken off the wall of the hall.

If we have not a spear in the house, we can easily make one from a bamboo cane, cutting the spear-head out of stiff cardboard and pasting it into a slit at the top of the cane.

The helmet of the fireman in the picture on this page is also made of cardboard painted with gold paint. The cowboy's lasso is just an ordinary clothes-line from the laundry. Material really counts for very little; ingenuity is everything.

THE ADJECTIVE LETTER

ONE of the very best games for the fireside is the adjective letter, which can be played by any number of children—the more the merrier. Nothing can be simpler, but few things cause more hearty laughter.

All that need be done is for one member of the party to write a letter full of blank spaces. These blank spaces should take the place of adjectives; and when the letter is ready the writer should call upon the party, one by one, for adjectives. He should put the adjectives down in the order in which they are spoken. The writer of the letter should not contribute adjectives himself, as the fun of the adjective letter lies in the quite accidental association of words. A member of the party may, for instance, frequently call himself or herself very unpleasant names, and the most ridiculous things come together when the blanks are filled up.

Here is a letter with blanks, which will show exactly how the game should be played:

Dear People,

The new year has now begun its journey, and this is the time for making resolutions. The future of our lives is before us, and we set out on a journey through another year, full of hope ahead, and the memory of a Christmas behind. What a year the past has been! And what a year this one is going to be! Tommy will be six; Nancy will be eight, and every member of this party will be a year older when this year is past. That giant Old Age, who captures us all, creeps slowly on his way, ready to seize us in his grip when something like a hundred more years have come and gone. But let us make a resolution that will terrorise this enemy of childhood: let us one and all agree, on this very day, to be true to the Children's Encyclopædia, which keeps its readers young. With such a friend no child can ever be old, and we few, we band of friends, will look forward and say to all the world that we will be .

With much love to all of you, my very people, I beg to sign myself,

Your Friend.

It is, of course, much more easy to write a letter about a particular party or a particular event, because the writer can make the letter much more interesting by bringing in the names of all the members of the party, or by referring to anything specially interesting to them. This letter, however, may be helpful at the beginning. Here it is given with the blanks filled up. The adjectives, which are printed in a different type, were all put in by chance.

Dear *Happy* People,

The *clean* new year has now begun its *rollicking* journey, and this is the *pretty* time for making *little* resolutions. The *high* future of our *glorious* lives is before us, and we set out on a *tender* journey through another *noisy* year, full of *stupid* hope ahead, and the memory of a *fair* Christmas behind. What a *dark* year the past has been! And what a *blue* year this one is going to be! *Dull* Tommy will be six; *horrid* Nancy will be eight; and every *simple* member of this *gracious* party will be a year older when this *dignified* year is past. That *grave* giant Old Age, who captures us all, creeps slowly on his *noble* way, ready to seize us in his *broad* grip when something like a hundred more *serene* years have come and gone. But let us make a *straightforward* resolution that will terrorise this *grand* enemy of childhood: let us one and all agree, on this very *green* day, to be true to the *beautiful* Children's Encyclopædia, which keeps its *loving* readers young. With such a *splendid* friend no child can ever be old, and we *joyful* few, we *grateful* band of friends, will look forward, and say to all the *stately* world that we will be *brilliant.* With much love to all of you, my very *ridiculous* people, I beg to sign myself,

Your *Perfect* Friend.

The longer the letter is, the more fun it is sure to give, and parties are not likely to get tired of this sort of entertainment if the letters are drawn up so as to be personally interesting to every member of the party.

THE GAME OF ORANGES AND LEMONS

IN the game of oranges and lemons the two tallest players stand opposite each other with their clasped hands held up to make an arch. One of these players is Orange and the other Lemon, but the rest of the players are not allowed to know which is which. A line is then formed in single file, and, as it passes under the arch, Orange and Lemon sing these words:

"Oranges and lemons,
Say the bells of St. Clement's;
You owe me five farthings,
Say the bells of St. Martin's;
When will you pay me?
Say the bells of Old Bailey;
When I grow rich,
Say the bells of Shoreditch;
When will that be?
Say the bells of Stepney;
I'm sure I don't know,
Says the Great Bell of Bow.
Here comes a light to light you to bed;
Here comes a chopper to chop off your head!"

With the last words the arch descends on the player who is passing beneath, and he is a prisoner. He is then asked, in a whisper, if he will be an orange or a lemon, and when he has replied in a whisper, he is sent to stand behind the one chosen. The march now begins again; and when, one by one, all in the line have been served in this way, a mark is placed on the floor, and all the oranges, holding to each other from behind, pull against all the lemons. The side that succeeds in dragging the other side well over the mark on the floor wins the game.

HOW TO KNOW THE ROCKS

It is very interesting, not only to those who are ambitious to become skilled geologists, but to all of us, to be able, as we go about in different parts of the country, to tell what kind of rocks there are round about us. Especially does it add to the interest of a railway journey if, as we pass through cuttings or enter and leave tunnels, we can, on looking out of the windows, say what are the rock formations that we are passing, and to what period of the world's history they belong.

As we read in that part of this book that begins on page 2881, the earth's crust is made up of various layers of rock, some of it formed by the action of water, and other parts due to the action of fire. Then we read on page 4246 how to make a collection of rocks that shall teach us a great deal about the earth's history. But if we can get to understand, in a general way, by the appearance or the shape of the hills and cliffs, the particular kinds of rock of which they are made, we shall find an added interest in all we know and read of the earth's past history, away in the remotest times, and we shall know, also, where to look for new specimens to go into our collection of rocks.

Limestone rocks, showing the well-marked layers

Of course, when the surface of hills and cuttings is covered with soil and is grown over by grass and ferns and bushes, it is impossible to see the rock under the soil. Then, again, where the bare surface of the cliff is exposed, the rock is sometimes so affected by the action of the weather that it is almost, if not quite, unrecognisable to the eye at a distance.

When the rocks themselves can be seen exposed to view, as in a more or less perpendicular cliff or in a very steep cutting, it will be at once noticed that the rock has one of two general characters. Either it is in layers, or *strata*, as they are called, or it has no such regular arrangement. Although not invariable, it may usually be taken for granted that the stratified rocks—those in layers—were formed by the action of water, while the non-stratified, or irregular rocks, are the result of fire. There are some formations of rocks known as metamorphosed, or changed rocks, which are more or less in layers, though these are not so pronounced as the stratified rocks. They were originally formed by water, but have since been affected by fire, and so changed that they have little resemblance to their original form.

Conglomerate, or pudding-stone, with pebbles embedded

First of all, we shall learn the character and appearance of some of the stratified rocks. There is limestone, which is so much used for building, making cement, statuary, and other purposes. It varies a great deal, being sometimes white, resembling loaf-sugar in both colour and texture. An exposed layer of this is very striking. Limestone is sometimes cream-colour or dull yellow, varying to blue-grey, and while it is often close grained, or built up of tiny crystals, it is also at other times like chalk. Marble is really a limestone. There is a sort of limestone called oolite, which is made up of round grains that give it the appearance of a fish's roe. A bluish variety found in Indiana is a popular building stone. Many varieties of marble of almost every color are found in the United States, and Vermont, Tennessee, and Colorado have many large quarries which employ thousands of men. Very little marble fit for statuary has been quarried in the United States, though it is believed that much exists.

In chalk cliffs we see many nodules, or rounded lumps, of a hard, black, or grey, or brown rock, which, when split, have a more or less transparent edge These pieces are made of the ordinary common flint. Sandstone looks like what its name implies—a stone made up of grains of sand. It varies, of course, according to the size and colour of the grains, some sandstone being coarse and other fine grained, while the colour may be red, brown, yellow, or green. The strata, or layers, are usually very plain. It is the ease with which some kinds of sandstone can be split along the layers that renders this particular rock so useful for many purposes. The brown sandstone once so popular for building in New York came from Portland, Connecticut. It is also found in New Jersey.

Conglomerate, or pudding-stone, can usually be identified. As we pass through a cutting, or see it along the face of a cliff, it looks, as its name indicates, like a plum-pudding. Big

and little pebbles are thickly embedded in a layer of sandstone, and look something like the plums and currants in a Christmas pudding. When the pebbles are sharp and angular instead of rounded, as we sometimes notice, the rock is called breccia.

The rocks formed by fire are as varied as those that owe their construction to the action of water. Granite we all know, whether it be red or grey, because it is the stone used for curbs in all our towns and cities. A pitch-like stone, varying in colour from green to brown and yellow, that may be seen in veins or masses bursting through other rocks in Europe or South America, is pitchstone. Basalt is easily recognised by its black, uniform colour and its curious structure, which is in columns, like the Giants' Causeway, which we see on page 4821, and on the shores of Lake Superior.

Very often we see crossing another rock a vein of a dull, dirty-green colour, streaked with brown or red. This is the well-known serpentine that looks so beautiful when polished and made up into ornaments. It is found usually with the limestone rocks.

The metamorphosed, or changed, rocks have, as might be supposed, an appearance something like both the other kinds of rock—those formed by fire and those by water.

There is a rock that looks like granite, but the minerals of which it is composed are arranged more or less in layers. It has been called stratified granite, but it is really gneiss. Another rock, which has a slaty appearance at a distance, and consists of layers of white quartz and mica, is known as mica-schist. The thickness of the layers of each mineral vary greatly, but mica-schist always has an appearance that once recognised cannot be mistaken. These are the two principal rocks of the metamorphose class that occur.

It is, of course, very difficult to give such details as shall enable us to identify all the different kinds of rocks found in the United States, but the hints given should prove useful. And if when we travel or go for a holiday we take a small geological map with us, we shall be better equipped for our recreation of identifying the various formations of rock through which we pass.

A DAINTY MUSLIN WINDOW-CURTAIN

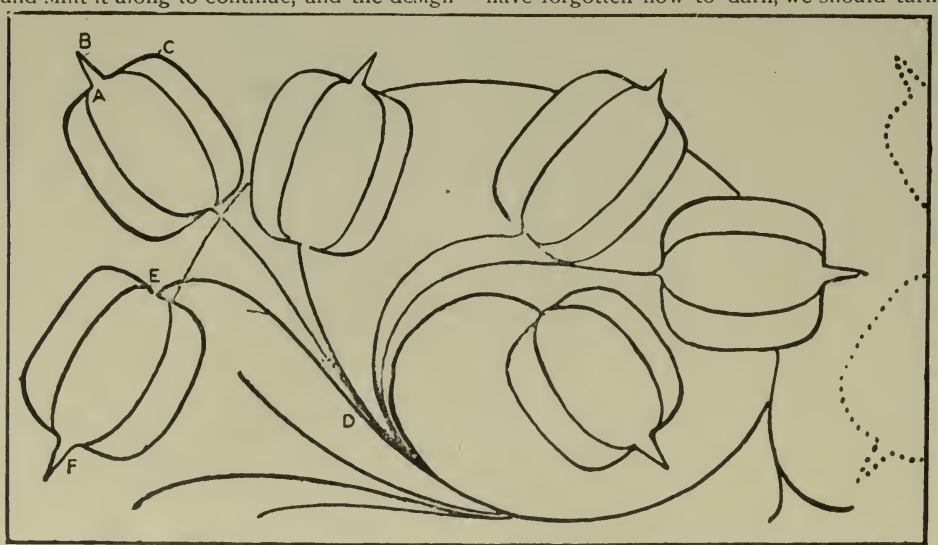
THE idea illustrated in picture 3 on the next page is a charming way of decorating short, white, book-muslin curtains, and the wonderful thing about it is that there is no need to have the pattern drawn on to the material, because this kind of muslin is transparent enough to be seen through. The pattern, which is drawn on paper, is therefore pinned underneath the muslin, and the work done on top.

The particular design shown below, which is made from the honesty plant, is a repeating pattern—that is to say, we work one section and shift it along to continue, and the design is arranged to join on neatly, as indicated. The best thread to use is white flax thread — medium fine — which is cheap.

We should cut it so that long threads are left to work with, and use a medium-sized darning-needle.

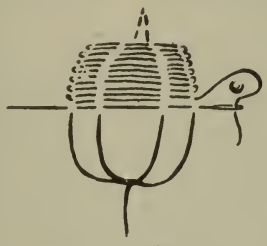
We must measure our window, cut the muslin to fit, and make the hem before we begin our pattern, which must be traced on to a sheet of note-paper from the picture, and outlined in ink. With two pins it can be fixed underneath the muslin, on the left side, two inches above the hem.

We all know the darning-stitch, which is described on page 3515; that and ordinary running stitch is all we have to use. If we have forgotten how to darn, we should turn to page 3515, where it is fully explained. Now to begin: we tie a very tiny knot in the thread, and put the needle in at point A



1. The pattern of the honesty design, exact size, to be pinned underneath the muslin as a guide

in the pattern picture, behind the muslin; the pattern can be bent for the purpose. We run three stitches to B, and three back again to A, a long stitch to C, and then start darning from side to side of the honesty shape. We take three long stitches on top and two tiny ones underneath, leaving a small loop at each end until the shape is covered and we are down to the stalk. We run down the stalk and up the next one, from D to E, where we begin to darn the next honesty shape, this time working upwards. Finish off with a back stitch at the point marked F.



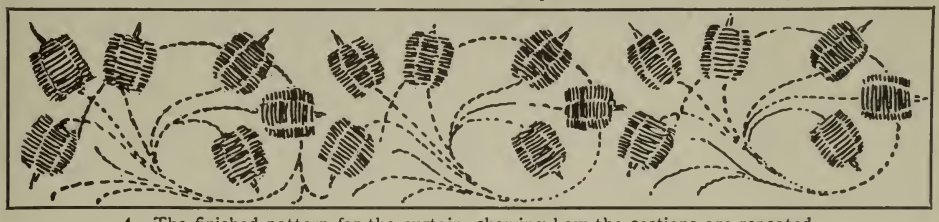
2. The darn

This should almost finish the thread, but even if we still have some cotton left we should begin with a new thread at the top of the next shape. Joins in the middle of a shape must be avoided. We continue like this, running all the stalks and darning the shapes. The paper pattern underneath our work makes it firm, and prevents puckering. We should notice that the two little stitches are always made on the inner lines, which are to help us to keep them straight, and also form part of the pattern.

3. The curtain complete

For those of us who do not know how to trace off the pattern, this will explain. Buy a sheet of tracing-paper and cut off a piece big enough to cover picture No. 1. Lay it on top, and go over the whole pattern, which will clearly show through, in pencil. Remove it and pin it to a piece of stout note-paper, and then get a piece of carbon-paper, such as clerks use in their bill-books, and lay that in between. Go over the pattern on the tracing-paper again, and a clear impression from the carbon will be left on the sheet of note-paper below. A charming table-centre can be made with this pattern by using it as a border all round a square of fine muslin.

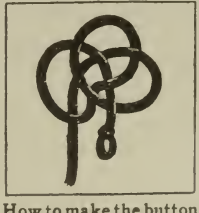
It should be finished with a hem one inch wide, and backed with a piece of soft pink silk to show up the pattern. Or, if we like, we can make a little pin-cushion for someone's birthday by using one "repeat" of the pattern only, darned on to a piece of muslin cut into an oblong shape measuring 6½ inches by 4½ inches. But, instead of darning it in thread, we can use mallard floss silk in palest pink, costing a few cents a skein. When the darning is done, cut another piece of muslin, the same size, for the back, and join these two pieces neatly together by running them round three sides, half an inch from the edge. This makes the little bag to contain the cushion, and when we have turned it right side out, it is quite ready to go on.



4. The finished pattern for the curtain, showing how the sections are repeated.

A BUTTON MADE FROM A SHOE-LACE

It may interest us to know how we can make a coat-button from an ordinary leather shoe-lace. We take the shoe-lace and make a loop at one end, just as we should make a loop in a piece of string. The loop should not be too big, as it is to be used for attaching the button, when completed, to a coat. The plan to follow in making the button is to tie a series of knots, taking care to keep the button round and neat as we make it. It is sufficient to keep on tying simple knots, one on top of another, until the button is the required size. But if we want to make a really attractive button, we should loop the shoe-lace on the principle shown in the picture. We need not stop at three loops, but can continue the series on the same plan, and then pull the whole tight, when, if we have been careful, we shall have a neat, round button. A little practice will soon enable us to invent other designs for our shoe-lace buttons. The best plan is to practise for a time with a piece of thick string until we thoroughly understand how to tie the knots so that the button may be round, like a little ball. The final knot should be securely fixed.



How to make the button

MAKING A COLLECTION OF WOODS

A GREAT deal of amusement and instruction is to be obtained from a collection of different kinds of woods, and such a collection it is within the power of each one of us to make. The woods of the different trees are wonderfully varied in weight and solidity and marking, and by preparing sections of these we have a collection that is pleasing to the eye and that need take up very little room in the house.

Sections of wood for our collection should be made *across* the trunk, and they should be thin enough for the light to pass through. With a little practice such sections can readily be sawn. A good saw is necessary, and if the wood be dry it should be damped, so that the different parts of the material may hold together and a smooth section be provided.

WHERE TO OBTAIN SPECIMENS

Specimens for our collection may be obtained in different ways. Of course, if we live in the country, especially in the neighbourhood of woods where trees are being felled, we may get permission to take sections from the trees. But it is astonishing how many really excellent and serviceable specimens are to be obtained for nothing at all in saw-mills, lumber-yards, cabinet-making establishments, carpenters' shops, and so on. In fact, almost any place where different kinds of wood are used and dealt with is sure to provide us with some specimens, at any rate. While it is especially to be desired that our sections should be across the trunk of the tree, if this is difficult or impossible, sections cut lengthwise are by no means to be despised.

HOW TO MOUNT THE WOODS

Our specimens should be as complete as possible—that is, the sections should be as large as we can obtain and conveniently store; but great size is not essential, and quite small sections a few inches square are quite large enough to show the characteristics and markings of the different woods. It is not necessary to mount the specimens, although, of course, the collection is much more presentable if every piece of wood is properly mounted.

It is necessary that we should be able to hold the wood up to the light and see its texture; but this may be easily done if we gum or glue the wood down upon a sheet of thick paper or card that has a neat oval opening cut in it, just like the opening in a mount for a photograph. In fact, if we can afford to buy them, photograph mounts, which may be purchased at any photographic shop and at most stationery shops, would make admirable mounts for our wood.

We should see to it that, as far as possible, our specimens and their mounts are uniform in size, as they will look much neater if they are, and can be kept one above another in a box or letter-case. A fly-leaf of paper should be pasted on to each mount and folded over the specimen to keep it clean and undamaged. Upon this sheet, too, should be written the name of the tree from which the wood comes, and the use to which the particular kind of wood is generally put. The more interesting and extensive the facts we can write down and keep attached to a specimen, the more valuable does it become.

IMPROVING THE COLLECTION

To the clever boy or girl, many ways of improving the collection, both in appearance and in value, will occur. For instance, the mounts of the plain card or paper may be decorated in some neat way that will not distract attention from the specimen itself. Then, if we can obtain, in course of time, photographs or good printed pictures of the different trees represented in our museum of woods, the collection will be much more instructive.

It will be very interesting, too, if we live in the country, to have a collection within a collection, by keeping together specimens of the woods of the different trees that grow in our own neighbourhood. Then from time to time we can arrange our specimens round a room, and thus provide our friends with an entertaining exhibition. Trees that do not grow where we live, and whose woods we are unable to obtain locally, are often to be found in the districts where our friends live, and so, by getting these friends interested in our collection, we may obtain some new specimens from them. This is a specially good scheme if we have friends living abroad.

SOME WOODS TO OBTAIN

Our woods should, of course, be classified—that is, arranged in a proper order, and the proper order is according to the families of the different trees. There are the conifers, or pine family. It includes the silver fir, a white pine used for floors; the Norwegian spruce fir, the ordinary white wood of the carpenters; Southern pine, used much by builders; and both white and red cedars; the larch, used for house and boat building; and the well-known yew, formerly employed in the making of bows for English archers.

Then there are the various kinds of leaf woods, as distinct from the woods of trees that have needle-shaped leaves, like the pines. These will be found much denser in texture than the wood of trees of the pine family.

There is the oak, the most useful of all our timber trees; the elm, a wood which is valuable on account of the fact that it will not split or warp; the ash, a tough, elastic wood, used much by carriage-builders and for oars; the wood of the various fruit-trees, such as plum, cherry, and chestnut; the beech, a very hard timber; the hawthorn, a reddish-white wood; the tulip-tree, yellowish white in colour; the box and pear, used by engravers; maple, a reddish wood; sycamore, used for machinery and in the manufacture of charcoal; alder, another wood reddish in colour; walnut, willow, silver poplar, aspen, birch, elder, and hazel. All these have their own peculiar colours and markings and characteristics, and are well worth obtaining and keeping carefully in our timber collection.

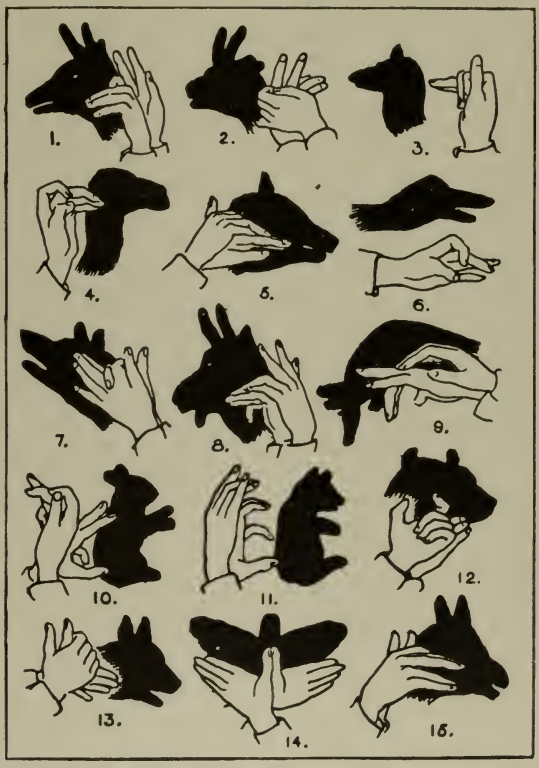
THROWING SHADOWS ON THE WALL

THE study of shadows is a very important branch of science. In the part of this book that begins on page 1865, for instance, we read about eclipses, and we learn that when an eclipse of the moon takes place what really happens is that the shadow of the earth is cast upon the surface of the moon by the sun, and the shape of this shadow is one of the reasons for believing the earth to be round, or spherical, in shape.

But, in addition to the fact that there is science to be learnt from a study of shadows, it is worth knowing that a great deal of amusement and pleasant recreation may be obtained by casting shadows upon the wall with no other aid than that of the hands. Of course, we require a good light from a lamp or gas or electric light to throw the shadow, and we need some white or light flat surface upon which the shadow may be cast, but beyond this no apparatus at all is necessary.

Very little is needed in the way of directions. We must, of course, have our hands between the light and the wall or other surface upon which we wish to throw the shadows; and in the pictures on this page we see a number of shadows of animals that any clever boy or girl can make with a little practice. We should imitate closely the position of the hands as shown in each picture until we get the shadow clearly and correctly. Let us repeat all the different forms over and over again, and after a little while we shall remember the position of the hands without having to refer to the picture.

Having succeeded in learning to make these various forms, we must next learn to give action to the shadows by moving the fingers or thumbs so that the animals appear to be eating, or moving their ears or legs. Much fun, for instance, can be caused by clever movements of the Teddy-bear shadow. It also adds greatly to the effect if we can imitate the sounds made by the different animals and birds — barking, quacking, grunting, and so on, as the case may be.



SHADOWS MADE BY THE HANDS ON THE WALL
1. Reindeer 2. Chamois 3. Hound 4. Camel 5. Pig 6. Goose 7. Wolf 8. Goat 9. Elephant 10. Hare 11. Teddy Bear 12. Ox 13. Dog 14. Butterfly 15. Donkey

The shadows shown in the picture are merely a few of hundreds that may be produced by different combinations of the hands and fingers. New forms, or rather additional forms, we shall invent as we practise making shadows; and it is remarkable how the same position of the hands, or almost the same position, will give entirely different shadows provided the hands are held at different angles to the light, and a finger or two be moved this way or that, as the case may demand.

Of course, the brighter the light the blacker will be the shadow, and the outline will be clearer or less defined as we move our hands nearer to the light or to the screen or wall. For all ordinary purposes, and for an entertainment given on the spur of the moment, a light wall or blind is quite suitable, but some who are particularly quick and skilful in inventing and producing shadows may like a special screen upon which to give their entertainments. This may be made quite roughly, of any size, by merely nailing or screwing four battens together to form a square or an oblong, and covering the framework, thus built up, with cheap cloth. It would, of course, be quite flat, and would pack away, when not in use, behind a cabinet or chest of drawers. In using a screen, we should, of course, let the audience look upon one side of it, while we stand on the other side, with the light that is to cast the shadows beyond us. The spectators would see the shadows through the screen—that is, on the side opposite to that upon which we are casting them.

Those who are even more ambitious and have the time to spend in making a more elaborate screen can, if they so desire, improve this by painting upon it curtains, giving it the appearance of a stage. This, of course, adds greatly to the appearance of the shadows from the spectator's point of view, while it really costs very little indeed. But, as explained, no accessories are actually needed.

PROVERB GAMES FOR THE FIRESIDE

THERE are a number of interesting games with proverbs that will give much fun at an evening party or at any time that a number of friends are met together. We read of one such game on page 2137, and there is another somewhat similar, in which the task set is for one player to guess a proverb that has been decided upon by the other members of the party who are present.

CRYING PROVERBS

THE game of Crying Proverbs is played in the following way. One player retires from the room, while the others settle upon some proverb, and each takes one word of the sentence. Then the player outside comes in, and, at a signal, all the others call out their words at one moment. From this hubbub of mixed sounds the player from outside has to try to learn the proverb that has been selected. If at first he does not succeed, the proverb can be cried out again and again, until he does guess it or gives up in despair.

Of course, there are a number of points to be considered that add to the difficulty and consequently to the amusement of the game. It is better not to choose a proverb that has in it some distinctive key-word, for if the guesser hears this he is likely to answer correctly at once. For example, the word "broth" would at once suggest "Too many cooks spoil the broth." Then it is wise to choose a fairly long proverb, so as to have as many players as possible calling out the words, rendering the sounds the more confusing.

ACTING PROVERBS

IN this game each player takes it in turn to be the actor, and he has to go through some actions which will suggest a proverb. The other players watch him, and try, from what they see him do, to guess his proverb. For instance, the action of sewing would suggest "A stitch in time saves nine." Carrying a cup very carefully across a room would mean "A full cup must be carried steadily." A pebble rolled along on the ground, and then picked up and looked at as though something were expected to be found upon it, would be "A rolling stone gathers no moss." There is, of course, good scope for ingenuity here.

PROVERB GAMES ON PAPER

THERE are several proverb games that are played with pencil and paper. A good game to play round the fire is for each player to write upon a slip of paper the vowels only of some popular and well-known proverb. The papers are then exchanged, and everybody has to try to discover the proverb of which he has only the vowels. Here is an example: i e a o a a a e a a i. This looks rather formidable, but it is really the skeleton of the proverb "Give a dog a bad name and hang him." If this game is thought too difficult, we may play a similar game by taking well-known proverbs and omitting every other letter or every third letter.

Another similar game is to break up a short proverb into its letters and arrange these in alphabetical order, thus: d d e e e e g i n n n o o s s w w. If it is considered too difficult, one word may be given of the proverb as a key. For instance, in this example the word "weeds" might be given. The whole proverb is "Weeds need no sowing."

At a proverb party a good puzzle is this:

We is do

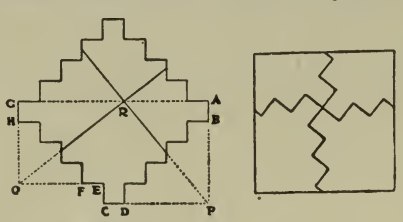
This represents a well-known proverb in an abbreviated form. That will be a clever boy or girl who guesses the solution without having heard it before. The proverb represented is:

"Well begun is half done."

In all these proverb games it is essential that the proverbs chosen should be really popular ones that are quite well-known to most people.

SOLUTION OF THE SQUARE PUZZLE ON PAGE 5112

WE read on page 5112 how Kenneth was offered a prize by his father if he solved a curious puzzle. He tried for a long time before he could do it, but just before bedtime came he was successful, and his father was very pleased. If we wish to do what Kenneth did, this is how we must proceed: Prolong the lines A B and C D to meet at the point P; and also the lines E F and G H to meet at Q. Then, along the line A G, measure A R equal to B P. If we now cut along the straight lines P R and Q R, we shall have four pieces which fit together into a square, as shown in the second diagram. The original figure was built up of rows of squares, beginning with a row of nine. The puzzle is solved in exactly the same way if we begin with a row containing any *odd* number of squares, the successive rows each containing two squares fewer than the previous row, so that we always arrive at a single square top and bottom.



How the square was made

SOLUTIONS OF THE PLANT PUZZLES ON PAGE 5108

IN the botanical puzzle game on page 5108, descriptions were given of six different plants, and we had to name these plants of such varied characters, uses, and appearance from the descriptions given. The correct solutions are as follows: 1, Bladderwrack; 2, Mushroom; 3, Sweet-scented vernal grass; 4, Hyacinth; 5, Wheat; 6, Cocoanut palm.

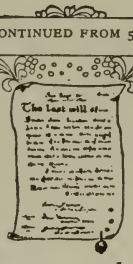
THE NEXT THINGS TO MAKE AND THINGS TO DO BEGIN ON PAGE 5287

THE STORY OF A BEAUTIFUL THING

I DO not know anything more beautiful than the Last Will of Charles Lounsbury. I do not know anything which brings home to us with such quiet power the truth that the best things belong to us all. We are rich by being alive. We may walk penniless in a country lane with all the real wealth of the world; we may be millionaires at the bank and be poor in all that is real wealth. All this is said most beautifully in this little 'Will,' which I first saw mentioned in 'Public Opinion,' an admirable paper for all who love life. It was so beautiful that I could not rest until I had the 'Will' itself, and now that the author has sent it to me I cannot help finding this corner for it. The writer of the 'Will' is Mr. Williston Fish, of Chicago, a man of great reputation in law and finance in that city. Charles Lounsbury was a "big, strong, good man" far back in Mr. Fish's family, and so Mr. Fish gave his name to the 'Will.' There are many rather unusual legal words in it, but their meaning is plain, and we can all read this 'Will' and feel, whatever our bank-books say, that we own the very earth.

THE LAST WILL OF CHARLES LOUNSBURY

CONTINUED FROM 5164



HE was stronger and cleverer, no doubt, than other men, and in many broad lines of business had grown rich, until his wealth exceeded exaggeration. One morning, in his office, he directed a request to his confidential lawyer to come to him in the afternoon; he intended to have his will drawn. A will is a solemn matter, even with men whose life is given up to business, and who are by habit mindful of the future. After giving this direction, he took up no other matter, but sat at his desk alone and in silence.

It was a day when summer was first new. The pale leaves upon the trees were starting forth upon the yet unbending branches. The grass in the parks had a freshness in its green like the freshness of the blue in the sky, and of the yellow of the sun—a freshness to make one wish that life might renew its youth. The clear breezes from the south wantoned about, and then were still, as if loth to go finally away.

Half idly, half thoughtfully, the rich man wrote upon the white paper before him, beginning what he wrote with capital letters, such as he had not made since, as a boy in school, he had taken pride in his skill with the pen:

IN THE NAME OF GOD, AMEN.

I, CHARLES LOUNSBURY, being of sound and disposing mind and memory—he lingered on the word memory—do now make and publish this my last will and testament, in order, as justly as I may, to distribute my interests in the world among succeeding men and women.

And first, that part of my interests which is known among men and recognised in the sheep-bound volumes of the law as my property, being inconsiderable and of no account, I make no account of in this my will.

My right to live, it being but a life estate, is not at my disposal, but, these things excepted, all else in the world I now proceed to devise and bequeath.

And first, I give to good fathers and mothers, but in trust for their children, all good little words of praise and all quaint pet names, and I charge said parents to use them justly, but generously, as the needs of their children shall require.

I leave to children exclusively, but only for the life of their childhood, all and every, the dandelions of the fields and the daisies thereof, with the right to play among them freely, according to the custom of children, warning them at the same time against the thistles. And I devise to children the yellow shores of creeks and the golden sands beneath the waters thereof, with the dragon-flies that skim the surface of said waters,

and the odours of the willows that dip into said waters, and the white clouds that float high over the giant trees.

And I leave to children the long, long days to be merry in, in a thousand ways, and the Night, and the Moon, and the train of the Milky Way to wonder at, but subject, nevertheless, to the rights hereinafter given to lovers; and I give to each child the right to choose a star that shall be his, and I direct that the child's father shall tell him the name of it, in order that the child shall always remember the name of that star after he has learned and forgotten astronomy.

I devise to boys jointly all the useful idle fields and commons where ball may be played, and all snow-clad hills where one may coast, and all streams and ponds where one may skate, to have and to hold the same for the period of their boyhood. And all meadows, with the clover-blooms and butterflies thereof; and all woods, with their appurtenances of squirrels, and whirring birds, and echoes, and strange noises; and all distant places which may be visited, together with the adventures there found, I do give to said boys to be theirs. And I give to said boys each his own place at the fireside at night, with all pictures that may be seen in the burning wood or coal, to enjoy without let or hindrance, and without any incumbrance of cares.

To lovers I devise their imaginary world, with whatever they may need, as the stars of the sky, the red, red roses by the wall, the snow of the hawthorn, the sweet strains of music, or aught else they may desire to figure to each other the lastingness and beauty of their love.

To young men jointly, being joined in a brave, mad crowd, I devise and bequeath all boisterous, inspiring sports of rivalry. I give to them the disdain of weakness, and undaunted confidence in their own strength. Though they are rude and rough, I leave to them alone the power of making lasting friendships, and of possessing companions, and to them I give all merry songs and brave choruses to sing, with smooth voices to troll them forth.

And to those who are no longer children, or youths, or lovers, I leave Memory, and I leave to them the volumes of the poems of Burns and Shakespeare, and of other poets, if there are others, to the end that they may live the old days over again freely and fully, without tithe or diminution; and to those who are no longer children, or youths, or lovers, I leave, too, the knowledge of what a rare, rare world it is.

THE MUSIC OF THE WILLING HEART

A POOR old fiddler was trudging late one night through Epping Forest, when a little man in a red cap met him.

"I want you to come and play at a wedding dance," he said.

"I'm sorry, sir," said the fiddler; "but I and my fiddle are too old for that sort of thing. What with my rheumatics and my broken instrument, I can only make such a screeching noise that people are glad to give me a penny to stop playing and go away."

"Never mind," said the little man. "If you will only play with a willing heart, you'll play well enough!"

He took the old fiddler to a lighted cave in the depth of the wood, and then led him down an underground passage, which opened out into a splendid hall. Hundreds of pretty little fairies came dancing with delight round the poor old fiddler, crying: "Do play us a waltz! We have never heard a waltz! Do play for us!" Remembering that it was only a willing heart that they wanted, the old beggar put his old fiddle under his chin and began to play. To his surprise, his arm and fingers became as strong and supple as a young man's, and his broken fiddle gave out a tone of wonderful beauty. Rocking himself to and fro with joy at the fine music which he was making, he played for hours and hours without feeling the least fatigue; and when he had played every tune that he could remember, one of the fairies said:

"Willing heart shall have a willing hand. Henceforward you shall always play as well as you played to-night!"

When the old fiddler woke up next morning, he found that he had become an excellent violinist, and that he had grown about forty years younger; while his cheap fiddle had turned into a magnificent violin with a splendid tone.

THE FABLES OF ÆSOP THE SLAVE

THE SICK KITE

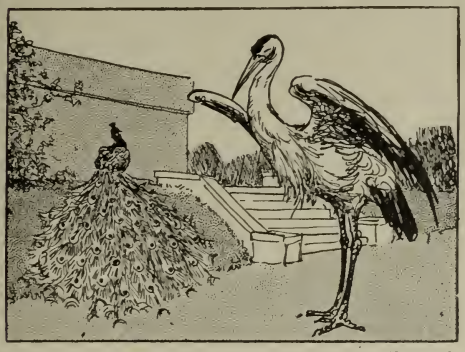
A KITE had been ill for a long time. Thinking that he was dying, he begged of his mother to go to all the churches and ask that prayers might be offered up for his safe recovery.

"How can you expect anyone to pray for you," said the old kite, "when you have, during your whole life, robbed and thieved of the very persons whom you now expect to help you?"

It is useless to repent when too late.

THE PEACOCK AND THE CRANE

ONE day a peacock and a crane chanced to meet. The peacock



strutted past, spreading its fine tail and looking with contempt upon the other.

"Well," said the crane, "fine feathers make fine birds indeed, but I think that it is a much grander thing to be able to do something and soar above the clouds, than to strut about on the ground to be looked at by every passer-by."

Those who are finely dressed should not scoff at their poorer companions.

THE OAK AND THE REED

A GREAT oak-tree which grew beside a river was blown down one stormy night. As it lay on the ground, in the morning it noticed a reed which grew close to the edge of the water, and had not been injured. The oak was surprised, and asked the reed how it could remain safe and uninjured in a storm which had been strong enough to tear up an oak by the roots.

The reed replied:

"I am safe because, instead of being stubborn and stiff, and trusting in my

own strength, I yield and bend to the blast, which then goes over my head and does me no harm at all."

It is not wise to be stubborn; it is often safer to bend and give way.

HERCULES AND THE COUNTRYMAN

A COUNTRYMAN was driving his cart along a road filled with ruts, when one of the wheels stuck in the mud, and the horses were unable to draw the cart out of it. The countryman at once began to call upon Hercules to help him out of his difficulty.

"Put your shoulder to the wheel!" cried Hercules. "Whip up your horses

and help them, for that is the only way to obtain the aid that you want."

Those are helped who help themselves.

THE WORLD ON A TABLE

"WELL," said an Orange, gazing about him, "it looks as if this is going to be a very nice dinner-party. I've been served up for dessert three nights in succession, and so far this is the finest thing in dinners I have ever seen. I don't think I should mind being eaten at a party of this kind, I really don't."

"My dear fellow," said a Cherry from another dish, "you make a great mistake if you think that you will enjoy being eaten at a refined dinner-party. I have seen a deal of life, and I assure you that there is nothing more terrible for an Orange, or a Pear, or an Apple, or a Melon, or a Banana, than to be eaten at a gentleman's dinner-table."

A shudder ran through all the other fruit-dishes.

"You see," said the Cherry, "refined people eat Oranges with knives. They peel you, scrape you, cut you up bit by bit, and then chew you to death. How different when a child gets hold of you! He makes only a tiny hole through your peel, pushes in a lump of sugar, and then sucks you gently and sweetly out of life. I declare that that is a delicious death. But a knife—horrible! Oh, how grateful I am that I was born a Cherry!"

"And I, that I was born an Olive!"

"And I, that I was born a Nut!"

"Tut, tut!" cried an old Melon. "What does it matter how one dies? For my part I am a philosopher. I take life and death as they come. It's my nature. But I'm a Frenchman."

"I've always longed to see France," said a fat Fig. "I've heard that it's a delightful country. Nice climate, plenty of revolutions, and frogs treated as chickens. Oh, scrumptious!"

"France is all right," replied the Melon easily. "Where do you come from?"

"From Turkey," said the Fig.

"I've heard of Turkey," said the Melon.

"We've just had a revolution ourselves," said the Fig proudly.

"I always thought," cried an Orange, "that Turkey was something that these horrible human beings eat at Christmas."

"When you come to think of it," said the Melon, rolling his eyes round the table, "we fellows here represent practically the whole world. And we are all on a single table! I am from France."

"I am from South Africa," said an Orange.

"And I from Spain," said another Orange.

"And I from California," said a third.

"My country is Tasmania," said an Apple; "it's young, but progressive."

"Oh, I hate young countries!" laughed an Olive. "Thank goodness, I come from Spain! A rare old stick-in-the-mud part of the world is Spain."

"I," said a Bunch of Grapes, "come from Worthing, in England. Rule Britannia! Excuse me, but I'm an Imperialist. Pretty place, Worthing. Such beautiful bathchairs, and you really never saw such elegant bathing-machines in all your life. Excuse me, won't you? But I really can't help it. Rule Britannia!"

"I'm in favour of islands," said a Banana. "My home is a rare pretty little piece of floating land. I come from the Canaries."

"I am entirely French," said a Cherry.

"Jamaica made me what I am," said a piece of Ginger. "Oh dear, what a lovely country that is! Jamaica, 'tis of thee! I could cry to think of it."

"Italy has the honour of having produced me," sneered an Olive.

"As for me," creaked a Nut, "I come from Brazil, and I wish I was back there again, I do indeed."

"Well," said the old Melon, "it is exactly what I told you; we fellows represent the earth. We have all crossed the sea, and we all meet together on a single dinner-table in London. Anybody setting eyes on us sees the world. Instead of eating us, these stupid human beings, if only they had the understanding, would sit round the table and ask us to tell them stories of what we have seen."

"I could tell them a few things about Brazil," said a Nut, "that would make their hair stand on end."

"Suppose," said a Spanish Orange, "that we beguile the time of waiting by telling each other stories of our different countries."

"To begin with," said a Banana, "in the Canary Islands, all the

flowers are most splendid, and as for the insects, why, I assure you——"

At that moment a number of servants filed into the room, and took up positions on either side of the table. The butler cast his eye over the preparations, and said, with a frown :

"Those bananas do look common, that they do! How her ladyship can have such costermonger fruit on the table I can't imagine!"

He looked over the table disdainfully, and sneered at the fine dishes of fruit that had been collected together from all quarters of the world.

"It is the same common-looking fruit that the costermongers sell from barrows in the streets. I can't think what is the matter with her ladyship!" said he.

As he left the room to announce that dinner was served, one of the Bananas whispered to the other fruits :

"He calls us common! Fancy a fellow like that calling us common! I should like to see him make a banana!"

"Well, you know," said the Bunch of Grapes, "I'm half inclined to agree with him. He's an Englishman, and I can't help feeling that he's right. Excuse me, but, Rule Britannia! All you foreigners, of course, can't understand my sentiments in the matter ; but really and truly——"

The door was thrown open, and in marched Sir Thomas Tupkins with Madame Pffeniger clinging to his arm.

THE LITTLE MAN AND THE DRUMS

A FARMER, who was on very friendly terms with a dwarf living on a hill in one of his fields, was in great perplexity. His little son was to be christened, and the dwarf would certainly expect to be asked to the ceremony. But it would never do, the farmer thought, for the dwarf to appear at so solemn a gathering ; and the clergyman would be shocked, and the village people would not like it, and would always be talking about it.

When he was at his wits' end, the boy who looked after his pigs offered to arrange matters with the dwarf in such a way that not only should the little man of the hill stop away without being offended, but he would also send a handsome christening present for the farmer's little son.

The farmer instantly sent the boy off, and, taking a sack, the lad went to the hill and knocked. The dwarf let him in, when the young boy presented his master's compliments and requested the honour of the dwarf's company at the christening.

This greatly pleased the dwarf, who accepted the invitation, and added that he would send a christening present. Then he opened his money-chests, and telling the boy to hold up a sack that was on the floor, he poured a great deal of money into it, but not nearly enough to fill it."

"Is that enough?" he asked at last.

"Well," said the boy promptly, "many give more, and few give less."

The dwarf then again began pouring money into the sack, and once more he asked the question :

"Is that enough?"

"It is about what most people give," answered the boy.

The dwarf, not to be outdone, emptied the whole of his money into the sack, and asked again :

"Is that enough now?"

The boy looked at the sack and saw that there was as much as he could carry, so he said :

"No one gives more, and most people give less."

This satisfied the dwarf, who now wanted to know who the other guests were to be.

"Oh, there is to be a great crowd! First of all, there will be a bishop and three clergymen."

"That doesn't matter—they never take any notice of me," said the little man of the wood.

"Then," continued the boy, "there will be musicians, and we are to have some fine drums."

Now, the dwarfs cannot endure the beating of a drum, and when the boy said there was to be music the dwarf was greatly alarmed.

"Drums!" he cried. "Oh, then I shall stop at home! Thank your master for his invitation, but say I cannot possibly come."

Then helping the boy to get the sack on his back, he saw him to the door, which he afterwards closed and bolted.

GELERT, THE FAITHFUL DOG

KING JOHN of England had not much affection to spare for anyone. But there were two beings he really loved—his beautiful daughter, Joan, and his splendid greyhound, Gelert. And when Joan married Llewelyn, the Prince of Wales, he gave them Gelert as a wedding gift. Prince Llewelyn was a great hunter, and he, too, soon got to love the noble hound sincerely.

The first day he took Gelert out with him, the greyhound chased a stag from Carnarvon to a rock—which is now called Beth Gelert—where the stag fell dead from exhaustion.

Gelert was always the first hound to appear when Prince Llewelyn blew his hunting-horn at the castle gate. But one morning the greyhound did not answer the call. Putting the horn to his lips, the prince again blew long and loudly, and then called, "Gelert, Gelert!" But the hound did not come, and, being unable to wait any longer, his master rode off to the hunt.

That day, however, he had little sport, for Gelert was not there. Tired, disappointed, and angry, he returned to his castle, and as he entered the gate the dog came bounding out with his mouth dripping with blood. There was a strange look in the eyes of the hound, which told the prince that something dreadful had occurred.

"Has he gone mad, and killed somebody?" he exclaimed.

A terrible suspicion flashed across his mind. Princess Joan had a little son a year old, and when Gelert was not out hunting he was always to be found by the child's side. Prince Llewelyn rushed toward the room where his baby had been sleeping, and the hound followed him. A trail of blood led to the room. The prince drew his sword as he entered, and then recoiled in terror. There was a pool of blood on the floor, an empty, overturned cradle, and no sign anywhere of the child. Crouching down by the cradle, with a look of entreaty, Gelert began to whine.

Blind with rage, Prince Llewelyn turned upon him with uplifted sword, and thrust it through his heart, crying:

"Monster, you have devoured my son!"

Giving a wild yell, the greyhound expired with his eyes fixed on his master's face. His dying yell was answered by a cry from beneath the cradle, and there Llewelyn found his little son unharmed, with its sleepy head resting on the body of a dead wolf. Now that it was too late, Llewelyn saw why Gelert had not come that morning when he sounded his horn. The wise and faithful hound had smelt out the wolf, and had fought and killed the fierce beast.

The prince was broken-hearted. "Although I cannot bring you to life, Gelert," said he, sadly, "I can keep alive the memory of your noble deed."

He buried the faithful dog by the rock where the stag that Gelert had chased from Carnarvon had fallen, and for hundreds of years people passing by the grave threw on it a stone, and the cairn they made is still called Beth Gelert, or the Grave of Gelert.

LE MALIN FERMIER ET LE NAIN

THE ENGLISH VERSION OF THIS STORY IS GIVEN ON PAGE 4798

UN fermier qui possédait une petite colline sur ses terres, ayant decidé qu'elle ne devait pas servir à rien, se mit à la labourer. Aussitôt un nain qui l'habitait en sortit et, furieux, demanda au fermier de quel droit il osait déranger son repos en labourant le toit de sa demeure. Le fermier s'excusa humblement, mais remarqua qu'il serait dans l'intérêt de tous deux que la colline fût labourée et qu'on y récolta une moisson.

Le nain refusa d'abord, mais le fermier fit de son mieux pour le convaincre. Il proposa de tout faire lui-même à la condition que le nain consentît à ce que, la première année, tout ce qui pousserait au-dessus du sol fût au fermier, et tout ce qui serait dessous au nain; et la seconde année, ce qui serait au-dessous, au fermier, et au-dessus, au nain.

Le nain consentit à cet arrangement; mais le malin fermier planta du blé la première année et abandonna les racines au nain, tandis qu'il prenait le grain; et la seconde année, il planta des carottes, qu'il récolta en laissant au nain le feuillage inutile.

THE NEXT STORIES ARE ON PAGE 5231

WINTER SPORTS IN CANADA

VOLTAIRE when once asked if he knew anything of Canada, answered, "Canada? Yes, a few arpents of snow." This idea prevailed in Europe for years. No country, with the exception of Siberia, was so long misrepresented. Only a few years ago Rudyard Kipling called her, "Our Lady of the Snows."

Canada lies partly in the Arctic region, where ice, frost and snow rule supreme for seven or eight months in the year, but it is unfair to take this section of the country as an example of Canadian climate. In Ontario along the Great Lakes the climate is milder than that of New York City, while in certain parts of British Columbia it is milder still.

About the middle of November, the small streams commence to freeze over and there is an occasional flurry of snow, but the chances for enjoyment do not vanish with the coming of frost. On the contrary they are increased by the tingle of the icy wind and the crunch of the snow under foot. The cold sets every nerve tingling. Action is what one craves and action one will have. With this comes a thrill so intense that you care not for the needles of frost or the cutting north winds. Kipling brings this out when he answers for the small boy of Quebec.

"When asked, 'Are you friz?'
Replied, 'Yes I is,
But we don't call this cold in Quebec.'"

SKATING

By December the first, ice is strong enough for skating. This is the opening of the season, when Canadians become most enthusiastic. They are greatly devoted to out of door exercises and all kinds of field sports. Of these skating is the king of winter sports. Young and old rejoice when the ice will safely carry them, and it would be a novelty to find a Canadian boy or girl who does not know how to skate. Snow covers the ice, but every town has its covered rink. Masquerade skating parties afford no end of fun and amusement, while nothing delights the small boy so much as a game of shinny.

COASTING

At the first fall of snow fun increases. Boys and girls get out their sleds and the hills are black with a merry crowd of rosy-cheeked children. Coasting vies with skating in its popularity. During the evening, the grown people take the place of children, and the "bob" that of the sled, and the fun continues. Boys did not always have fine sleighs for coasting. In the days of George III, they coasted in sleds made of a small board with beef bones as runners.

SLEIGHING

Sleighing is a very enjoyable pastime of winter. The jingling of sleigh bells is constant music heard throughout the cold winter months. Young and old find much pleasure in driving and in sleighing parties.

SNOWSHOEING

By the middle of January, the snow is piled to the fence tops and roads are blocked. Then the snowshoer is in great glee. The shoe is made of thongs of rawhide fastened to a frame of tough, light wood. The shape of the netted part varies in different sections of the country, but the principle of construction is always the same. In wooded districts the wooden frames are frequently oval, but sometimes round. The most popular shape in Canada has narrowed and almost square toes turned up a few inches, and the oval ends in a long tail behind, looking not unlike a tennis racket. The shoe is about three feet long and thirteen to sixteen inches wide. The wearer uses moccasins and straps the foot in the centre of the oval. Snowshoes are a necessity in many places, a convenience in others, and a

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great aid to winter sport wherever snow is deep enough to use them. Snowshoeing is one of the most fascinating sports, and many towns have their snowshoe clubs. Its members enjoy many a tramp over thickly covered fields, or hold races. The snowshoe was invented by the Indians.

TOBOGGANING

Another popular sport that the Indians have given to the Canadians is tobogganing. When the first settlers came to Canada they were amused to see little Indian children sliding down hills on flat pieces of wood strapped together and turned over in front. The present toboggan is modelled after the old Indian type. It consists of several narrow pieces of well-seasoned ash bound together and strengthened by several narrow cross pieces. The front is curled like a scroll. Along each side is a rail to which the riders may cling. A toboggan is about six feet long and eighteen inches wide. In order to add excitement long chutes are built for slides. Some are frequently sixty or more feet high, with an incline of forty degrees, and so constructed that there may be a long stretch of open country at the base. The slide and a considerable distance from the base are covered with ice. The coasters pass like a comet leaving behind a tail of snow. A speed of seventy miles per hour is frequently attained. Shooting the slide has a fascination that one cannot resist and is an experience that one never forgets. A Chinaman once expressed his opinion thus, "Allee one whizz-whizz, and an hour's walkee allee up hill."

SKIING

In many parts of Canada a favourite sport is the Norwegian pastime of skiing. The ski consists of a thin piece of ash as long as the wearer can reach upward, and from three to five inches wide. The front is pointed and bent upward to prevent it from cutting into the snow. The foot is firmly fastened to the middle of the ski, and a short pole is used as a balance. In Norway children learn to ski almost as soon as they can walk. Ski jumping is very exciting sport. A long smooth hill is chosen for a course. About one third the distance down, an elevation of about six feet called the hop is built and covered with snow. The jumper starts and when the hop is reached straightens up and sails through the air, touching the hill again several feet from the bottom. The skill consists in continuing the run down the hill standing. There are tournaments for distance and for jumping.

ICE YACHTING

Ice yachting is popular in all parts of Canada. Along rivers, lakes and bays you will see fleets of boats. Regattas are held in many places during the winter and valuable prizes are given to the winners. A good boat will skim over the ice at the rate of sixty miles an hour.

ICE GAMES

Canada boasts of two ice games, hockey and curling. Hockey is the great national game and was borrowed from the Indians. In the handling of the hockey stick and in chasing the puck, Canadians have not found their equals. Curling is a game borrowed from Scotland. It is a favourite pastime from the Atlantic to the Pacific. Every town has its hockey and curling rinks.

CARNIVAL

The Indians were noted for their winter festivals. These took place every year at some centre along the St. Lawrence and all kinds of sports were held. The Canadian Carnival is simply the Indian custom perfected by his paleface successor. It is a week of winter sport and amusement. An important feature is sometimes an ice-palace. The festivities are usually brought to a close by a storming of the palace.

There is not another country with such a variety of winter amusements as Canada affords. Every one looks forward to the coming of frost and cold with keen anticipation. People do not complain of the cold because upon it depend all kinds of winter amusement. With skating, coasting, tobogganing, snowshoeing, skiing, ice yachting, hockey and curling, where else can you find a greater array of exciting sports? Is it any wonder that Canada of all countries in the world is most enjoyable in winter?

WHAT THIS STORY TELLS US

IN this story we are told of one of the most wonderful exploits of modern times. For many, many years people have thought of making their way through the snow and ice to the North Pole. Dozens have tried and failed, but at last an American naval officer, after twenty-three years of effort, has succeeded in reaching the point where every direction is South. Here we are told how Commander Peary and his companions prepared for the journey, and how success finally came, April 6, 1909. They found no land around the Pole, but the point is in a great sea of ice.

HOW PEARY FOUND THE POLE

IN another part of our book you have been told of the many attempts to reach the North Pole, and how men have suffered and even died and still have not succeeded. But, as in so many other things, it seems that perseverance will finally win. As men have learned more and more of the frozen regions, expeditions have pushed a little farther into the land of ice and snow. Englishmen, Americans, Norwegians, Italians, all have tried. It was certain that some day the great mystery must be solved, but still everyone was surprised when on September 6, 1909, it was announced that Commander Robert E. Peary of the United States Navy, had finally reached the coveted point where every direction was South, on April 6th, 1909.

TWENTY-THREE YEARS OF ARCTIC EXPLORATION

For twenty-three years Commander Peary had thought of little else. He says in his book that in 1885, when a young officer in the navy, he read a description of Greenland, which so roused his curiosity and excited his imagination that he himself determined to see this land for himself. The next summer he made a trip alone and studied the thick sheet of ice which lies over nearly all of the country, so curiously named Greenland. Afterward he made other expeditions into the same country and discovered many facts of interest about that island. In fact, he discovered it to be an island in 1892, for up to that time it was not known whether or not it was attached to the mainland. The next year he went again, and Mrs. Peary went with him, and in that desolate region a little daughter was born.

COMMANDER PEARY DETERMINES TO SEEK THE POLE

Finally he reached the determination to try to do what so many had failed to do, that is, to reach the North Pole. The first trial in 1898 was unsuccessful of course, but he made other expeditions and still others, until at last he was successful. But the attempts were not wasted, for each expedition taught its lesson and showed what mistakes must be avoided if success was finally to come. Every voyage he learned more about the ice, the Eskimos, what the dogs could do, what provisions must be carried, and why others had failed.

A SHIP WHICH COULD FORCE A WAY THROUGH ICE

A number of men interested in the far North formed a society known as the Peary Arctic Club and provided money for the brave explorer. It had been found that ordinary ships were too light for the work, for in the terrible North the great floating fields of ice sometimes come together and crush a ship like an eggshell. So the club had a ship built especially for the work. It had very powerful engines and its frame was braced at every point to resist the crushing force of the ice. Then too it was sharp in front in order to cut through the ice. This ship was called the "Roosevelt" in honour of the former President and was used first by Commander Peary in the expedition of 1905 and 1906. Though this expedi-

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tion was not successful it went further into the North than any had gone before. In fact, it came within less than 200 miles of the pole.

In 1907–8 the ship was entirely refitted. New engines were provided and other changes were made. On July 6, 1908, the expedition, which was finally to be successful, left New York. It consisted of Commander Peary himself, Ross G. Marvin, his secretary, the surgeon, Dr. G. W. Goodsell, Mr. Donald B. MacMillan, and a young Yale graduate, George Borup; nor must Commander Peary's faithful coloured attendant, Matt Henson, who had been with him for years, be forgotten. Then there was the crew of the Roosevelt, commanded by Captain Robert A. Bartlett, a brave Newfoundland sailor. The Roosevelt sailed up the Greenland coast and stopped at Etah, which is the most northern point at which people live all the year round. From here the ship carried twenty-two Eskimo men, seventeen women, ten children and two hundred and twenty-six dogs. On the fifth of December, 1908, the boat reached Cape Sheridan, though it had several times been almost caught in the ice. By this time the ice was closing in so fast that it was found impossible to steam further north. The ship was placed in a convenient place and soon was frozen fast in the ice.

Preparing to try for the pole

The men spent the time hunting, taking observations and photographs and preparing for the trip. Some lived upon the ship while others built little huts of the boxes containing the food and other supplies. The camp was afterward moved to Cape Columbia. The sledges were made and tested to see that they were equally strong in all parts. The best dogs were chosen and the Eskimos, who seemed strongest and most trustworthy, were selected from the larger number. In all, there were the seven men, whose names have already been mentioned, seventeen Eskimos, nineteen sledges and one hundred and thirty-three dogs. Some of these Eskimos had been with Commander Peary on some of his previous expeditions, and knew his ways and were ready to help him. The sledges carried food and the instruments to determine how far they had gone.

The importance of food in the arctic region

It is easy enough to get clothes which will keep one warm while in the cold regions, but where every particle of food must be carried along and to be without food is death, it is necessary to choose the best and the most easily packed food which is nourishing and at the same time takes up little room. It has been found that pemmican, which is dried beef ground to a powder and mixed with tallow, is the best food. Sugar is also good. The pemmican furnishes strength and sugar furnishes heat.

Commander Peary had formed his plan carefully. All of those men whose names have been mentioned and the Eskimos started out together with loaded sledges February 28, 1909. After they had gone a certain distance a small party would unload all the food it carried beyond what was necessary to take it back to the ship on the sledges of those who were going forward. The supporting party would then turn back. Later another party would also turn back, leaving any unnecessary food with those who were to go on. The plan worked well, for when the last supporting party turned back it was found that the party which went on to the Pole had twice as much food as was necessary to bring it back to the ship. The first supporting party turned back on March 14, 1909, and the next day Mr. MacMillan also turned back, for it was found that one of his feet was badly frostbitten and it was therefore impossible for him to go on, although Commander Peary had intended that he should be one of the very last to turn back.

A sad accident in which Mr. Marvin lost his life

About a week later Mr. Borup with some of the Eskimos also turned back, and Captain Bartlett led the advance. With sledges which were not very heavily loaded he went ahead and made a road through the snow which the others followed. Sometimes they had to chop a road through ice. When he and his party had gone as far as they could

without resting they would stop, make snow huts, and sleep. When the others had come up with them they would harness their dogs and start on again. They could do this very well, for you must remember that in the far North the days and the nights are six months long, and at this time there was no difference in the twenty-four hours. The next party to turn back was under the charge of Mr. Marvin. When he had gotten almost in reach of the ship some thin ice which he was crossing gave way and the young man was drowned. Mr. Marvin was an instructor in Cornell University and was a man who made many friends. His sad death was the only one of the expedition.

The ice is not all alike in these regions. Some of it is a hundred feet thick, and during the summer breaks up into great fields, sometimes many miles in extent. The weather is so cold, however, that ice soon forms on the open water between two great ice fields, but this is not always strong enough to bear the weight of a man with loaded sledges. The ice is seldom smooth but is piled up like a hilly rocky New England pasture.

THE POLE IS FINALLY REACHED

Finally (150 miles from the Pole), Captain Bartlett turned back and Commander Peary, Henson and four Eskimos started on the desperate rush to the Pole. Good progress was made and finally, on April 6, 1909, the instruments seemed to show that the Pole had been reached. Several flags were hoisted and the party camped. Mr. Peary went several miles further on and then turned to the right to take observations, and to be sure that he had gone far enough. For about thirty hours he stayed around the camp taking photographs, making observations and the like.

They had reached the point. The question was, could they get away? For with the unsuccessful attempts in the past the trouble had been to get back to civilisation in safety. A broken sledge, an accident to the dogs, or any one of a dozen things might prevent them.

The "Roosevelt" twice lay through the long Arctic winter fast in the ice, with no other ship near. Beyond you see the fields of floating ice, which could crush an ordinary ship as easily as you can smash a piece of fragile china. There is nothing but ice and water beyond.

How the party got back from the Pole

On the return journey, they threw away everything except what they would be sure to need, so that the dogs would have less to pull, and started back on the seventh of April. For most of the way they kept the trail which they had made while advancing, and some of the snow huts which had been built a month before were still standing.

Finally, sixteen days from the time they left the Pole, they reached land. Two days more brought them to the ship, where they told of their wonderful news, but they could not tell the world, because for more than two months longer the ship was held fast in the ice. The time was spent in exploring, hunting and seeking to find out more of the region in which they were.

A sad reminder of another expedition

While hunting, Messrs. MacMillan and Borup found the house where another American expedition commanded by Lieutenant Greely had lived for two years after they left their ship, the Proteus. In this house were found, just as they had been left twenty-six years before, books, jewelry, notes and records which it had been supposed were lost forever. Finally, as the summer came on, the ice began to break up and on the eighteenth of July the Roosevelt started to plough her way through the floating ice.

The reward to the brave explorer

The Eskimos were landed at Etah, with goods which made them millionaires among their tribe. The coast of Canada was finally reached in September, and soon the Roosevelt reached New York. Just before Commander Peary reached the Canadian coast Dr. F. A. Cook announced that he, too, had reached the North Pole a year earlier than Commander Peary had, and since that time had been living in the North with a few Eskimos trying to make his way back to civilisation. His story was accepted by many people who claimed that Commander Peary was not entitled to the credit of being the first to reach the Pole. Commander Peary's claims have been recognised, however, by all the learned societies of America and Europe, but Dr. Cook's have not. The United States Congress gave Commander Peary a vote of thanks and promoted him to be Rear Admiral, and as he had been worn out while striving to carry the United States flag further North than it had ever been done before, placed him on the retired list.

What will Admiral Peary do next

Many people have tried to get Admiral Peary, as we must now call him, to go on an expedition to the South Pole, which has been reached by Captains Amundsen and Scott, as you may learn in another place in our book. Admiral Peary says that he has had enough of such work, but many believe that before very long, when he is thoroughly rested, he will surely wish to try to conquer the difficulties of the South as he has done those of the North. There is a fascination about the life in the frozen lands which holds men fast. On, on, they go, seeing sometimes a musk-ox, a polar bear, perhaps a few birds. As they go farther there is no life upon the ice in the water, or in the air, except the men and the dogs. The cold is intense, the glare of the sun upon the ice blinds the eyes, and there is danger everywhere. If the dogs should become sick, or if a sledge should break there would be little hope. If one should slip on the ice and injure himself the remainder of the party must stop to wait for him to get well, and every day the supply of food grows smaller. Perhaps the ice gives way and the icy water stiffens the limbs as the unfortunate man struggles to climb upon the ice again.

Of what use is the discovery of the Pole

It is difficult to tell in simple words the advantages the scientist says will come from this exploit. He says that it will be of value in all geological calculation, but he does not make himself clear. One great use of all the expeditions has been to show us how a man can risk his life for an idea. It shows us that bravery still exists in the world, and that man can conquer if he will.

THE FINDER OF THE POLE

Here is Commander, now Admiral, Peary, on the deck of the "Roosevelt." In a region where the temperature falls many degrees below zero, it is wise to dress in furs, which keep in the heat of the body better than any other clothing. It is a clumsy dress, however, and one has difficulty in using his hands.

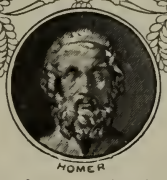
GREAT POETS IN THE HALLS OF PRINCES

Here we see Virgil, the great Latin poet, who wrote the "Æneid" to glorify the Emperor Augustus, crowned with the laureate's wreath and seated in the house of Mæcenas, the wealthy minister of Augustus, while Virgil's friend and fellow-poet, Horace, recites one of his own beautiful poems to that great patron of the arts.

To show his respect for Molière, the great French dramatist, who flourished in the age of Louis XIV., the king invited Molière to dine with him, while all his titled courtiers stood around, and thus did homage to the actor-dramatist, whose fame endures when the artificial honours of these French nobles have all been forgotten.

WRITERS OF OTHER LANDS

CONTINUED FROM 5055



THE foremost poet of antiquity was Homer. It is something like three thousand years since he flourished in Greece. The story of his two great poems, the "Iliad" and the "Odyssey," is told on page 67. For ages scholars have learned the language of ancient Greece, so that they might read in the original tongue those books and other compositions of the Greek writers who lived before the time of Christ.

Ancient Greece may be described as the mother of the civilised world; her writers were the pioneers of everything that is beautiful in thought, imagination, and expression. Homer's poems are in large measure descriptive of the legends that were born from the lively imagination of an ancient people, tales of fabulous adventure and the war-like deeds of men and gods; for to the Greeks there were many gods, and actual men who had once lived were often believed to have become gods after they had disappeared from earth.

Homer himself is something of a legend, for we know almost nothing about him. Seven different towns of Greece contended in ancient times for the honour of being his birthplace. Tradition says that he went about in public places reciting the poems he composed; that when he died and was buried he was worshipped as a hero. The Greeks named one of the months of their calendar after him, and for ages his poetry was an inspiration to them. He sang in praise of heroism, and invested manly courage with the beauty of golden words. His was the voice of an heroic age, and we cannot read his poetry to-day, even translated into our own tongue, without feeling that we are reading the work of one of the world's great men.

The next great writer of Greece, who has been called the "Father of History," lived nearly five hundred years after Homer, and was born about 490 years before Christ. His name was Herodotus, and he was a native of a famous town in Asia Minor, called Halicarnassus, which was a Greek colony. Perhaps it was due to the fact that he was expelled from his native town by a tyrannical ruler that he became a great traveller.

He wandered into many countries, eastward as far as Persia, visiting Egypt and the colonies which the Greeks had founded on the north coast of Africa. Everywhere he went he was interested in the people he met and the things he saw, and he wrote down accounts of the different peoples and their countries

based upon his own observations and on what he was told. In this way he compiled the histories of many ancient wars, and descriptions of towns and nations that had disappeared long ages ago, and of which we might have known nothing but for his travels and investigations. He wrote these histories in a pleasant, unaffected, familiar style, which makes them alive with human interest; and though it has often been doubted whether his stories were to be believed, many of his most extraordinary statements have since been found to have at least some element of truth.

It is thought that Herodotus died about 410 years before Christ, perhaps in Southern Italy, where he had gone some time previously to take part in the founding of a new Greek colony.

Rome had become master of the world, when Publius Vergilius Maro, whom we know as Virgil, was born near the Italian town of Mantua, on October 15 of the year 70 before Christ. The Romans were now the all-conquering people, the warrior race of the world, but their culture and learning they had taken almost entirely from Greece.

VIRGIL, THE AUTHOR OF THE "ÆNEID," THE FIRST OF THE GREAT LATIN POETS

Virgil went up to Rome as a young man to study, but as his health was weak, and he lacked the confidence necessary for a speaker, he gave up thoughts of public service, and, returning to his country home, devoted himself to the study of the Greek poets. He achieved great fame by a series of pastoral poems modelled on the Greek poet Theocritus, and was befriended by the celebrated Mæcenas, the rich patron of all the poets of his day. Seven years of his life he devoted to his next great work—a series of four poetic books entitled "Georgics," which may be rendered in English as "The Art of Husbandry," dealing with all aspects of country life. These appeared in the year 30 before Christ, and established his fame as the greatest poet of his age.

The remaining years of his life were devoted to the writing of the great Latin epic poem known as the "Æneid," which he undertook at the suggestion of the Emperor Augustus, in order to glorify the legendary founder of the Roman nation, and the royal house from which the emperor was descended. Æneas was one of the mythical heroes of Greek legend, a Trojan prince who escaped from Troy, as told in Homer's "Iliad," and it was Virgil's task to show how he had been the founder of the Latin nation. The story of the "Æneid" is told on page 70. Virgil died on September 21, 19 years before Christ, at Brindisi, in Italy.

VIRGIL'S FRIEND HORACE, ANOTHER GREAT POET OF ANCIENT ROME

One other poet of the ancient world must be mentioned. This was Quintus Horatius Flaccus, whom we know as Horace. He was born in Italy on December 8, 65 years before Christ, and died in Rome on November 27 of the year 8 before Christ. The father of Horace was a freedman, who had been able to send his son to Rome and afterwards to Athens for education.

It was at Athens that Horace was fired with thoughts of liberty, when he listened to a speech delivered by the famous Brutus, and he fought at the battle of Philippi, when the murderers of Cæsar were defeated by Antony and Octavian. He fled from the fatal field, and was afterwards glad to accept the patronage of those he had fought against, for in his poverty he turned to the writing of poetry, and Virgil, admiring his work, brought him to the notice of Mæcenas, whose brimming purse was at the service of the poet, and made him comfortable for the rest of his days. He received from this wealthy minister of Augustus a farm on the lovely Sabine Hills, not far from Rome, and in his poems he often sang of the delights of his pleasant life there.

DANTE, THE GREAT ITALIAN, AND HIS WONDERFUL POEMS

As Rome began to decline and, at the beginning of the fifth century of the Christian era, ceased to count as the greatest power in the world, the arts of literature and learning, which had been cultivated in her great days and carried on from the older times of Greece, almost went out, and ages passed before they revived. It was in the same fair land of Italy that the revival took place. What is known as the "Italian Renaissance," or re-birth, was heralded by the great poet Dante Alighieri, who was born at Florence in May, 1265.

Dante took a prominent part in the life of his native town, but in January,

1302, he was banished for his political opinions, and later was condemned to be burned alive if he could be captured. He thus became a wanderer from his native town, and had to find refuge in other friendly cities, settling at Ravenna, where he died on September 14, 1321.

THE EXILE OF DANTE AND THE EARLY DAYS OF PETRARCH

When his great poem, "The Divine Comedy," was written, we do not know for certain. Of his ways of life we know but little, but what we do know is that this wonderful poem is one of the world's grandest treasures, and displays the marvellous learning of the poet in the most varied branches of knowledge, expressed in language of majestic beauty. It is also notable for the vision it gives us of a strangely idealised love, as the inspiring force of his poem was the undying affection he conceived for a lovely Florentine lady, Beatrice Portinari, whom he saw when he was a boy, but who died in early womanhood without knowing what a pure flame of devotion she had awakened in the heart of the strange, sad Dante. He had been married for twelve years and had a family of seven children when he was banished from Florence. He never saw his wife again.

At the time that Dante had been exiled from his native town, a fellow-citizen, named Petrarca, was also banished, and two years later a son was born to him in his exile. Francesco was the name given to the boy, who was born at Arezzo on July 20, 1304. When he was eight years of age, he accompanied his father to the court of the Pope at Avignon, in France, for at that time the seat of the Papacy had been removed from Rome to Avignon. Later he went to Bologna, in Italy, to study classic learning at its university.

WHY PETRARCH WAS GIVEN A PALACE IN THE LOVELY CITY OF VENICE

Petrarch, as we call him, was twenty-two when his father died. He then returned to Avignon. He seems to have studied for religious service, although he never became a priest; but his mind was of a very religious cast, and much of his time he devoted to travelling among the churches and monasteries and seats of learning, searching for old manuscripts and also writing poetry.

Petrarch was, indeed, the second great figure of the Italian Renaissance, a man of genius whose gifts were recognised widely, and who was honoured by all the scholars then keenly alive to welcome any thinker of worth who arose in that day of renewed literary activity. His poems are among the most beautiful gifts that have come to us from the Middle Ages. Like his great forerunner, Dante, Petrarch had also a love romance, and a lady named Laura was to him what Beatrice had been to the writer of "The Divine Comedy."

As the greatest scholar and poet of his time, he was sought after by kings and princes. So proud was the Republic of Venice to have as a citizen one so distinguished that he was presented at the public expense with a beautiful palace in that city of palaces, and there he lived in state for years, all that he was asked to do in return being to leave his library to the Republic of Venice when he died. He died near Padua, on July 18, 1374.

GIOVANNI BOCCACCIO, THE GREAT STORY-WRITER OF THE MIDDLE AGES

The third great figure of the Italian Renaissance was a person very different in character from Dante and Petrarch. Giovanni Boccaccio was born, possibly at Florence, in the year 1313, the son of an Italian merchant. He studied for the law, and was a student at Paris for a time; but when residing in Naples he began to write stories both in verse and prose, and enjoyed the luxury-loving life of that town as well as the pleasures of Florence, where many of the great people lived like princes. His stories were amusing, fresh, and unlike any others that had been written before. They were full of warm, human feeling, bright with humour, and ingenious in their ideas. They were too free in their manners, but in this he only reflected the manners of his age.

With Boccaccio the whole modern art of story-telling may be said to have taken its rise, and he is better remembered and admired for his prose tales than for his poetry. He died on December 21, 1375, at the town of Certaldo, where his father had been a merchant.

We pass over nearly two centuries now, and look to Spain for the next great figure with whom we are concerned. Miguel de Cervantes Saavedra was the

high-sounding name of the Spanish writer whom we know simply as Cervantes. He was born in 1547, and died on April 23, 1616. He was only twenty-two when he wrote some pieces on the death of the queen of his land, and in the same year he went to Italy in the service of a cardinal, but soon enlisted as a soldier.

THE ADVENTURES OF CERVANTES, THE SPANIARD WHO WROTE "DON QUIXOTE"

Cervantes took part in the famous battle of Lepanto, where his left arm received injuries that rendered it useless for the rest of his life. But, despite this, he saw more fighting, was engaged against the Turks in Tunis, suffered five years of slavery under the Algerian pirates, and had many other adventures before he was done with soldiering.

Cervantes was nearly forty years of age when he married, and sought to support himself by writing for the stage, as he had already shown his literary power in a pastoral romance entitled "Galatea." His plays must have been fairly successful, for he wrote between twenty and thirty, of which only two are now preserved. In 1594 he was appointed collector of revenues for the kingdom of Granada, but three years later was imprisoned, owing to a shortage in his accounts. It is said, but it may be only a tradition, that it was while in prison he wrote the first part of the book by which his name became immortal, "Don Quixote," the story of which begins on page 899.

It is to the writers of the fair land of France we now must turn, and the first there to engage our attention was living at the same time as Cervantes.

MONTAIGNE THE FRENCHMAN, WHO IS FAMOUS FOR HIS ESSAYS

Michel Eyquem de Montaigne was surely an extraordinary boy, for until the age of six he spoke nothing but Latin, and every morning he was roused in bed to the strains of soft music! He was born on March 28, 1533, at his father's castle in Perigord, and when only six was sent to Bordeaux, where he remained for seven years, receiving the best education his time could offer. One of his tutors was a celebrated Scotsman, named George Buchanan, who was a professor at Bordeaux. The boy was studying for the law, but between the ages of thirteen and twenty-four we know almost nothing about him. Then he appears again in Bordeaux, in a public post, and fills the position of a city councillor there for thirteen years.

Montaigne married at thirty-four, and after his two elder brothers had died he succeeded to his father's estates, spending the remander of his life as a country gentleman of leisure, travelling often to foreign lands for his pleasure and instruction. It was in this leisured life that he began the writing of the essays for which he is famous, and there is, indeed, no pleasanter reading in all French literature than the charming little papers which he wrote as the mood came upon him, discussing all sorts of subjects and expressing his opinions in the most agreeable and elegant style of language. On September 13, 1592, he died at his castle in Perigord.

MOLIÈRE THE ACTOR, WHO WAS THE GREATEST OF ALL FRENCH DRAMATISTS

We have passed another century, and are in the Paris of Louis XIV., "the Grand Monarch," as he was called, when we make the acquaintance of the next great writer of France, Jean Baptiste Poquelin, known under his stage name of Molière. What Shakespeare is to England, Molière is to France. Unsurpassed as a writer of comedy even by Shakespeare himself, Molière is still the lesser dramatist, because he could not sound such depths of passion as Shakespeare does in "King Lear."

Molière was born in Paris on January 15, 1622, the son of a well-to-do furniture-dealer, and studied for the law, but early in life embarked on a theatrical venture, which, though it failed, made him an actor for the remainder of his days. He performed with his company in the provincial towns, and later was fortunate in receiving the patronage of the powerful Prince de Conti. The king himself was charmed with the gifted actor-dramatist, and delighted to honour him.

Molière thus became famous for the delightful comedies he wrote for his company of players, in which he himself usually played a part. It was after performing in one of his finest comedies, "The Imaginary Invalid," that he was taken ill and died at his house in Paris on February 17, 1673.

Françoise Marie Arouet was the real name of another great Frenchman who could write plays and novels and poems and histories equally well. He called himself Voltaire, and probably no writer in any age ever exercised a greater influence on the mind of his generation. He was born at Paris on November 21, 1694, and, like Molière and so many others, first studied for the Bar.

VOLTAIRE, THE GREAT PHILOSOPHER OF FRANCE IN THE EIGHTEENTH CENTURY

Of an intensely cynical and satirical turn of mind, Voltaire's earliest writings were in the form of lampoons, or attacks on public men, for which he suffered imprisonment in the Bastille, but afterwards he made his way at court, and by sheer force of his powerful personality made the whole of Europe listen to what he had to say.

Portraits and statues of Voltaire are very familiar in Paris to-day, and his little, sharp-featured, shrivelled face, in which there is always the suggestion of a cynical smile, is a good index to the writings of the man. He was quite lacking in reverence, but marvellously clear-sighted, when he sought to expose to men the folly of many of their accepted ideas.

Some of his histories and his plays show extraordinary knowledge, and he has always the power to make us think, even if we do not think with him. He was eighty-four when he died at Paris on May 30, 1778.

ROUSSEAU, THE FRENCH PHILOSOPHER, WHO WAS A WATCHMAKER'S SON

A great contemporary of Voltaire, and a curiously perplexing character, was Jean Jacques Rousseau, who was born at Geneva on June 28, 1712. He came of a French Protestant family, but led a very stormy youth, and turned Roman Catholic. There is nothing very creditable in his early life, and many of his adventures were of a dismal and unprofitable character. In 1753 he wrote an opera, and soon made friends among the rich and leisured of that age, against whom the terrible fury which later burst forth in the French Revolution was slowly gathering.

He wrote a novel, called "Emile," that made him famous, but is no longer read, as the ideas expressed in it were peculiar to his time. His writings did not a little, however, to help forward the cause of liberty, which was finally to triumph in so terrible a fashion not many years after he was dead. In England he stayed for some time as the guest of the great historian David Hume, but, of a quarrelsome and unsettled disposition, he could not keep friends, and his end at a place near Paris, on July 2, 1778, left a suspicion that he died by his own hand.

None of the writers we have been considering had written anything in the same class as the great romances which are the chief treasures of modern literature, and which it was left to Sir Walter Scott to raise to the height of perfection. But there was born at Besançon on February 26, 1802, the son of a French general named Hugo, who, following the footsteps of the great Sir Walter, enriched the literature of France with some works which will never die.

HUGO AND DUMAS, THE MASTER WRITERS OF FRENCH ROMANCE

Victor Marie Hugo, as he was called, was educated at Paris and Madrid, and when only a boy of fourteen he produced a tragedy. Poetry and romance were the passion of his life, and he enjoyed the highest honours which the favour of the public can confer upon those who entertain them with the magic of story-telling and great poetry. Such thrilling romances as "Les Misérables," "Nôtre Dame," and also "Toilers of the Sea," the story of which begins on page 4171, fascinated the public of his day, and will be read so long as romance has power to enthral us. He also wrote many great plays and poems, and was eminent in the public life of his time, being banished some years for his political opinions, during which time he lived in the island of Guernsey. But it was at Paris he died, on May 22, 1885. This great son of France was laid to rest in the Pantheon at Paris, where his tomb is visited by people from all parts of the earth.

Living at the same time as Victor Hugo was another writer, whose life was as romantic a story as any he ever wrote. Alexandre Dumas, the renowned author of "Monte Cristo," was the son of a republican general, and his grandmother had been a black woman, so that he was a quadroon. He was born in the north of France on July 24, 1803, and his early life was not particularly profitable, but, having a taste for

writing, he spent some years in study, and then began the most amazing career of any writer in history. Stories of all kinds—romances, plays, books of travel—flowed from his pen in a stream that seemed to be inexhaustible. Never had any one man showed such fertility of imagination, such ingenuity of invention, such boundless energy.

The fact was that Dumas was not only a genius, in whose mind revolved endless ideas for tales and romances, but he had the power to touch with his own individuality the work of others, and scores of lesser writers worked with him from time to time as his assistants.

Dumas was as kind-hearted and as prodigal as he was unscrupulous, and he had no sooner made a fortune than he contrived to get rid of it, so that when he left Paris for the last time, in 1870, and went to his son's villa near Dieppe, he was practically penniless. He died on December 5, 1870. His son wrote many novels and plays, and, taking a warning from his father, was very careful with his fortune.

GOETHE, THE MOST FAMOUS POET AND PHILOSOPHER OF GERMANY

From France we pass now to Germany, where, as culture had blossomed later than in the more western part of Europe, we do not find great writers until a later day. The first of world-wide fame is named Johann Wolfgang Goethe, and he was born on August 28, 1749, at Frankfort-on-Main. He, too, in common with so many literary men of all lands, was trained for the law at the University of Leipzig, but had no taste for that profession, and later studied science and literature at Strassburg.

Poetry and the romance of legend attracted his mind most, and by degrees he came to shape his thoughts into poetic form, having attempted the writing of plays and songs before he was twenty years of age. It was through the study of other poets and the old ballads, such as Sir Walter Scott himself had rejoiced in, that Goethe was first led to writing about them as a critic, and later to producing great poems himself. The work by which his name is best known to American readers is "Faust," a great poetic drama which has been translated into most languages of the civilised world, and has thrilled the hearts and thoughts of generations. His life was filled with the most fruitful activities, his friendships with the great men of his day are memorable, and the influence of his thought on the mind of Germany has been far-reaching and permanent. It was in 1775 that he was invited by the Duke of Weimar to stay in that town, and there he remained all the rest of his life, dying on March 22, 1832. Weimar is famous to-day because of Goethe, and because of the fact that the body of this great poet rests in the ducal vault beside that of Schiller, his friend and fellow-poet.

SCHILLER, THE GREAT DRAMATIC POET, WHO WROTE THE PLAY "WILLIAM TELL"

Johann Christoph Friedrich Schiller was the son of an army surgeon, and was born in Würtemberg on November 10, 1759. He, too, became a surgeon to a Würtemberg regiment, but early began the writing of plays, and had one produced in 1782. The Duke of Würtemberg acted very tyrannically towards him, and prohibited him from writing other plays, as those petty dukes of Germany were able to do at that time. So Schiller fled from the duchy and wrote his plays elsewhere, and finally found himself at Weimar. His works have earned for him the position of the foremost dramatic poet of Germany, and perhaps his play that is best known to American readers is "William Tell."

Numerous versions of his poetry are to be found in English, just as with Goethe, and lives of him have been written by many authors, the most famous being that by Thomas Carlyle. His life was a long struggle against poverty, and he died at Weimar on May 9, 1805.

HEINE, THE GERMAN POET, WHO BORE HIS TRIALS WITH QUIET HEROISM

There remains but one more great name that need engage us, and it, too, has added to the lustre of German literature. Heinrich Heine was born of Jewish parents at Düsseldorf on December 13, 1799, and early in life turned to the writing of prose and poetry. His poems are touched with rare beauty, both of form and feeling, and he undoubtedly did much to ennoble and spiritualise the mind of the German people. His late years were passed on a bed of suffering, and nothing that he wrote distinguished him more than did the patience with which he bore his years of pain before death released him on February 17, 1856.

CONTINUED ON PAGE 5317.

THE FLIGHT IN THE MOONLIGHT

CONTINUED FROM 5171

THERE lived in Normandy nearly a thousand years ago a little boy named Richard, grandson of the famous Rollo, who came with the vikings of the North to conquer the fair land about the River Seine. Little Richard had a lonely childhood. His stepmother disliked him, and he rarely saw his father, William Longsword. But when the boy was eight years of age his father became very ill, and thinking he was about to die, he took Richard to Bayeux and made the barons swear loyalty to the little heir.

Soon after, the father was treacherously murdered, and for little Richard there began a long series of troubled days. King Louis of France was his enemy, and thought he could easily deprive so small a boy of his dukedom.

But there were loyal barons and chieftains who loved and stood by the little Richard; and when the boy was taken prisoner, they rescued him. But not long did he remain free, for Louis, under some pretence of kindness, again got possession of the boy, who was then eleven years old, and shut him up in a tower at Laon in charge of Osmond, a Norman noble.

Now, Osmond was clever, and he taught Richard all he knew during the lonely hours that they spent in the tower. Moreover, he loved his little charge, and it pained him to see the boy growing pale and feeble for want of fresh air and exercise. Once, indeed, he dared King Louis' anger, and secretly took Richard out for a gallop across the country. The good this did the boy made Osmond quite determined that he would find a way to escape with the boy, to whom he was now much attached.

It was a wet season, and the damp and confinement in the tower made Richard really ill, so ill that the king and all those about the court thought the boy's days were numbered. Osmond wished them to think Richard was really worse than he was, for he had made a plan of escape, and was just waiting a favourable opportunity for carrying it out.

Before long the opportunity came. A great banquet was to be given in the castle, and preparations, watched by the boy prisoner from his window in the tower, went merrily forward. According to Osmond's instructions, when the officer paid his usual visit of inspection, Richard remained lying on his bed, able to answer questions apparently in only a feeble voice. When the officer had gone, Osmond told his little friend that he meant to

escape with him that very night, but when Richard eagerly asked "How?" he would not tell him, but only said:

"Eat up all your food; you will want all the strength you can get."

The day wore on, and as the hour of the banquet came, and the guests had entered through the gateway, the courtyard and the entrance and passages inside seemed quite deserted. Osmond opened the door of the room, looked down the winding stairway, and listened. Then, beckoning to Richard to follow him, they stole down the steps and across the courtyard, keeping in the shadows as much as possible.

Fortunately, Osmond knew his way to the barn even in complete darkness, and with the boy close at his heels he entered it, tore down a large truss of hay, snatched up a cord and bound the hay round the boy's body, so that no one would have dreamed there was a small boy in the middle of it. Then very carefully he set the bundle against a wall and hoisted it on to his back.

"Be quiet. Don't make a sound," he whispered into the bundle.

Now came the dangerous part of the venture, for Osmond had to cross the courtyard in the moonlight to reach the stables.

When he arrived at the stables, he put his bundle down, saddled a horse, set little Richard free from the hay, and led the horse out through a side door. Then, keeping the boy up in front of him, he wrapped a big cloak round the two of them, and rode quietly through the streets of the town, and when the houses were left behind, galloped away with his precious charge, as we see in the picture on page 5223. Little Richard lived to rule his dukedom and win the love and approval of the subjects whom he governed.

THE WOMAN WHO SOLD HER SHAWL

ONE day some poor children from the London slums were being sent for a fortnight into the country, in connection with the Children's Holiday Fund. It was a touching sight. The chatter of little tongues, the patter of eager feet, the scramble into the carriages, the packing of bundles and baskets on the racks, elder sisters making babies comfortable in the corners, younger brothers clamouring to sit by the window, and all, great and small alike, telling in excited tones what they would do and where they would go.

Walking up and down on the platform, or gathered in knots about the doors, were the mothers — poor working women, who had snatched an hour from the factory or the wash-tub to see their dear ones off. Each child apparently had its parcel of food for the journey, and a copper or two to spend on arrival.

But there was one child there who had neither—a little girl. She sat on the edge of the carriage seat, her wistful eyes wide open, but neither a smile on her face nor a word of gladness on her lips.

Her forlorn appearance attracted the attention of one of the women outside, whose own child was near by, merry as a bird, one hand full of pennies, the other grasping a bag containing buns. The sad white face of the little girl smote this good woman to the heart. Where was the poor child's mother, she asked, and had she no brothers or sisters, no pocket-money, no food? The child shook her head. Father was dead, mother could not leave her work, she had no brothers and sisters, and as for pocket-money and food, she simply spread out her empty hands. A companion had brought her to the station.

By this time several other people had gathered round, and many were the expressions of pity and concern. But the woman, whose shabby skirt and shawl proclaimed her extreme poverty, dashed a tear from her eye, and, saying "Wait a minute," hurried away.

Everyone had forgotten her, the guard was about to blow his whistle, and the train would soon be moving, when she returned, rushing along the platform, without her shawl, in search of the lonely child. In her hands were some pennies and a big bun.

"Hurry up, please!" cried the guard, holding open the carriage door; and the woman was just in time to place her gifts in the child's hands before the door shut with a bang and the train steamed away. She had sold the shawl from her ill-clad shoulders, so that the little girl might be happy like the others.

THE NEXT GOLDEN DEEDS ARE ON PAGE 5386

A ROMANCE OF LONG AGO

THE last famous book whose story has been chosen for telling here is a work of fiction dealing with the time of Jesus, written by an eminent American soldier-author. Probably no tale of Bible times has enjoyed greater popularity than this graphic and thrilling romance of an imaginary young Jew who became a convert through the teachings of Jesus. General Lew Wallace, the author, was already known in his country as a soldier and statesman, as well as a story-writer, when, in 1880, he published "Ben Hur," but the fame that book brought to him entirely eclipsed all his earlier achievements. He was fifty-three years of age when the story appeared, and few men so late in life have earned such world-wide popularity. With the exception of "Uncle Tom's Cabin," probably no novel written in recent times has been more widely read, and both are the works of American authors. General Wallace died in 1905.

BEN HUR

A TALE OF THE TIME OF JESUS

CONTINUED FROM 5146

THE great city of Jerusalem and all the land of Judæa were under the heel of Rome. A Roman official, known as the procurator, administered the government on behalf of the imperial power, and, supported by the stout blades of the Roman legionaries, kept the people of Jerusalem in subjection.

Such was the state of affairs when, some three years before the birth of Christ, a son, named Judah, was born to Ithamar, of the house of Hur, a prince of Jerusalem, and the richest man of his time. Judah Ben Hur, though of the Jewish race, was the playmate of Messala, the son of one of the high Roman officials at Jerusalem.

The friendship between the Jewish boy and the young pagan, who was two years his senior, seemed likely to endure, and Ben Hur did not cease to cherish the memory of his playmate during the five years that Messala was away in Rome for his education as a soldier. But when the Roman youth returned to Jerusalem, he was full of hatred to the Jewish people, having been taught in Rome to despise them as an inferior race.

Ben Hur realised, with sorrow, that the playmate and companion of his youth was likely to become the enemy of his manhood, for the young Jew was devoted to his own people. Ben Hur's father was now dead, but his mother consented to his becoming a soldier, on condition that he should never fight for Rome, but devote his arms to the service of Israel and the King of the Jews, whose coming had been foretold by the prophets of old, and whom the Jewish people expected to come as a mighty conqueror.

Messala had not been long back in Jerusalem when the new procurator arrived from Rome. His name was Gratus, and his entry into the city was made the occasion of a grand procession, for the Romans rejoiced in spectacular display, especially when that conveyed to a subjected people some notion of the overwhelming power of Rome.

High up on the flat roof of the house of Hur the young Jewish noble stood to watch the procession pass, and, leaning over the parapet, dislodged by accident one of the heavy tiles, which, falling into the road below just as Gratus was riding past, struck him from his horse, and in the confusion that followed both Jews and Romans were ready to believe that a deliberate attempt had been made on the Roman official.

Though Gratus suffered but slightly from this accident, Messala denounced Ben Hur as an assassin, and without the semblance of a trial the youth was condemned to the galleys, while the palace of his fathers was seized in the name of the emperor, and no one knew to what fate his mother and

his young sister Tirzah had been sent. Under a heavy guard, and subjected to the cruellest treatment, the youth was conveyed to the sea-coast, and in the villages through which he passed there was none of his own people who would venture to brook the anger of the Roman guards by giving him food and drink, much though they pitied him. Only in passing through the little town of Nazareth did a youth, who accompanied an elderly man carrying the tools of a carpenter, come forward with quiet fearlessness to the Jewish prisoner, and, looking upon him with infinite pity, give him a drink of water before the astonished guards could interfere.

A PRINCE OF JERUSALEM AS A SLAVE IN THE GALLEYS OF ROME

A galley-slave was usually worn to death in a year or so, but Ben Hur had not abandoned the hope that he might yet live to fight for the Lord of Israel, and even in the awful depression of his new life, chained to a bench in the galley, and tugging wearily at a heavy oar, he clung to this hope. His shrewd mind told him that by changing from one side of the galley to the other he would better be able to stand the strain of the toil, and this change he contrived to effect, so that he developed the strength and muscles of a giant, and became the best oarsman in the galley.

Three years had passed in this way, and never a word of kindness had the galley-slave heard, until it chanced that the Astræa, as the galley on which he served was named, was made the chief vessel of a fleet of one hundred assembled under the great tribune Arrius, to do battle with the pirates in the Ionian Sea. The attention of Arrius had been directed to Ben Hur, who was said to be the best rower on the galley.

HOW THE GALLEY-SLAVE BECAME A RICH PRINCE AGAIN

"From thy speech thou art a Jew," said the noble tribune to him.

"My ancestors further back than the first Roman were Hebrews," was the proud answer.

"I have not been to Jerusalem," Arrius went on, "but I have heard of its princes. I knew one, a merchant who sailed the sea. He was fit to have been a king. Of what degree art thou?"

"My father was a prince of Jerusalem, and as a merchant he sailed the seas. He was known and honoured in the guest-chamber of the great Augustus. His name was Ithamar, of the house of Hur."

The tribune raised his hand in astonishment, saying, "A son of Hur—thou?" For it was to Ithamar he had alluded. The noble Roman then heard for the first time the true story of how Ben Hur had been condemned without a trial, and resolved to examine into his case. Meanwhile, the galley required the service of its best rower, and Ben Hur went back to his toil at bench number 60. In the battle with the pirates the Astræa was wrecked. Arrius would have drowned but for the help of Ben Hur, and out of gratitude for this service, and pity for the youth's wrongs, the tribune adopted the young Jew as his heir.

A new life opened out again for the son of Ithamar, and he now spent five years learning the art of war at Rome. Arrius had died within that time, and Ben Hur possessed his wealth. A great expedition was preparing to attack the Parthians in the East, and Ben Hur took service in this so that he might experience real warfare, and be the better able to help his countrymen some day to throw off the yoke of Rome.

BEN HUR FINDS AN OLD FRIEND AT ANTIOCH, AND HAS MORE GOOD FORTUNE

It was at the great and populous city of Antioch that the forces were being assembled, and thither Ben Hur went. Here, to his surprise, he found that the greatest merchant, whose ships crowded the harbour, was one Simonides, who had been his father's steward and slave; and, according to Jewish law, all that he possessed, including his own person, was the property of the son of Ithamar.

But in the mind of Ben Hur there was no thought of asserting his power over Simonides, and he sought him out solely to discover what had become of his mother and Tirzah. He found the merchant an aged man, broken in body, for he had been subjected to cruel torture by Gratus, when that tyrant had sought to make him disclose the sources of Ithamar's wealth. Simonides had defeated the designs of the Roman, and had employed his dead master's capital to such good purpose that he had become the richest merchant in all the world. When convinced that Ben Hur was

indeed the son of his old master, he offered to surrender everything to him, according to the Jewish law.

Ben Hur, however, resolutely refused to profit by the devotion of Simonides, and would claim no more than that portion of the merchant's wealth which had been the property of his own father; though that of itself was sufficient to make its owner one of the richest men in the East. Liberty he could not give to Simonides or his daughter Esther, for by Jewish law a slave was a slave for ever; but he determined never to assert his ownership. His joy at meeting again one who had known and faithfully served his father was shadowed by the fact that Simonides knew nothing of the fate that had befallen his mother and sister.

Now, Simonides had not at once accepted Ben Hur as his master, but had first made sure of the young man's character and the truth of his story by sending a trusted servant to take him about the crowded scenes of Antioch, and report on his behaviour.

The young Jewish noble meets an enemy and decides to humble him

During a visit to the great circus where the favourite sport of chariot racing was conducted, Ben Hur saw various charioteers practising their four-horse teams in the arena, and one of these he recognised as the haughty Messala, his old playmate and false friend. A great meeting was to be held in this vast arena in a week's time, when the chariot races would be the centre of interest. Among the various teams there was one of four beautiful Arab horses, which belonged to the Sheikh Ilderim, who was in despair because the Roman driver did not seem to know how to drive them, Arabian horses being used to gentle treatment, and Roman drivers being accustomed to the merciless use of the lash.

Later in the same day Ben Hur had an opportunity to test the giant strength of his muscles, which had been developed by his years as a galley-slave; for the haughty Messala came driving his chariot through the streets regardless of the traffic, and his horses would have run down a camel that rested with its load on the roadway, probably killing an old Egyptian and a beautiful young woman seated within the covered shelter on its back. Springing straight at the nearest horses, he forced them into the centre of the road, and so avoided a collision. Only one of almost superhuman strength could have hoped to achieve such a feat without injury; but Ben Hur knew his strength was far beyond that of the ordinary man.

Balthasar, the wise man, tells Ben Hur the story of the star

Perhaps it was the result of this incident that made him determined to humiliate his enemy, and so, seeking out the Sheikh Ilderim, he offered to drive his Arab horses in the chariot race. A trial run convinced the sheikh that this young man of the powerful arms knew how to manage the team, and he consented to Ben Hur's driving his Arab four in the great race.

It was at the house of the sheikh that Ben Hur again met the old Egyptian whose life he had saved by preventing Messala's team from running down the camel. Balthasar was his name, and he was one of three wise men, who, having heard a mysterious Voice speaking to them, and, being guided by a star, had foregathered in the desert and made a pilgrimage to Nazareth to look upon the infant Jesus. From the lips of the old man Ben Hur heard the thrilling story, and rejoiced to think that perhaps the time was at hand when the prophesied King of the Jews would arise in his might as a great hero, and lead the ancient people to glorious triumphs over their Roman oppressors.

Simonides had also heard the story of Balthasar, and was eager to devote his enormous riches to fitting out an army to support this King of the Jews when he should rally all the nation to the flag of Judah. Messala had meanwhile recognised Ben Hur, and was busily plotting to remove him from his path.

Ben Hur has news of his mother and sister, and makes his plans

A letter addressed to Gratus by Messala had fallen into the hands of the sheikh's desert riders, and from this it seemed clear that Ben Hur's mother and sister had been imprisoned by the Roman tyrant, and were possibly still languishing in some unknown cell. But as nothing could happen to Ben Hur's hurt before the race, it was decided that as soon as it was over he should go into hiding for a time and afterwards

A GREAT ROMAN CHARIOT RACE IN THE DAYS OF "BEN HUR"

Nothing delighted the people of Rome more than to watch the exciting chariot races that took place in the great arena of the city known as the Circus Maximus. Round and round the chariots went at a tearing pace, as seen in this picture, and often they would collide with one another, either by accident or by the design of the drivers, the horses and charioteers being killed, or crippled for life, as was Messala when Ben Hur deliberately upset his chariot. Ben Hur carried no whip, but steered his horses to victory by skill and strength.

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prosecute his search for his mother and sister. As the day of the sports came round great excitement was displayed about the chances of the Arab team, for, not content with the hope of humiliating Messala by defeating him in the race, Ben Hur employed a loyal Jew to induce the Roman to stake his entire fortune on the outcome of the great race.

THE FIERCE EXCITEMENT OF THE CHARIOT RACES IN THE CIRCUS AT ANTIOCH

In no city of the Roman world at that time, other than Rome itself, could so vast a gathering of people have been got together as that which assembled to witness the sports at Antioch. In the great chariot race there were six contestants, and Ben Hur was the favourite, because he stood for the Jewish people and their hatred of the Romans, and there were many Jews in Antioch.

The excitement of the multitude was intense as they saw the brutal Messala deliberately direct his chariot against one of the others that appeared to be gaining on him, and upset the driver, who was borne from the arena in a dying condition. Ben Hur calmly and without a whip urged his beautiful Arabians to the gallop, seeming to pay no heed to the frantic efforts of his competitors. Steadily they drew on until it was a race between the Roman and the Jew.

In the breathless stillness of the excited multitude, the thunder of the horses' hoofs and the roll of the chariot-wheels seemed to fill the arena with that sense of hatred which rose in every Jewish breast at the thought of the Roman oppressor, when suddenly Messala, standing sideways in his chariot, brought his long whip with vicious force across the backs of Ben Hur's team.

HOW BEN HUR DEFEATED HIS HAUGHTY RIVAL IN THE GREAT RACE

A shriek of indignation went up from all the Jewish spectators, and from many a Roman, too, as those beautiful Arab steeds, trained in gentleness, and never before touched with a lash, startled and terrified by the pain of the coward's blow broke wildly from their steady and sure pace. They would have become utterly unmanageable but for the giant strength which three years in the galleys had given to the muscles of Ben Hur. With more than human power, as it seemed to the excited audience, he curbed the frantic beasts, and, bringing them once more into their steady pace, gained again on his Roman enemy.

Seven times round the great arena was the length of the race, and they were now at the last turn, when Ben Hur, urging his horses to their utmost, took the outward sweep, and, coming abreast of the Roman, deftly guided his horses so that the wheel of his chariot caught the outer wheel of Messala's, upsetting it and throwing the Roman beneath the hoofs of his galloping horses. Crippled for life, his enemy was carried from the scene, and Ben Hur was declared the winner, so that all who had wagered in favour of Messala lost their money, and he himself lost his entire fortune.

Ben Hur at once withdrew to a place of hiding until he might proceed to Jerusalem to search for his mother and sister. But he had little to fear from any vengeance of Gratus, as that unjust governor had now been displaced, and one named Pontius Pilate ruled in his stead.

WHAT HAPPENED AT JERUSALEM UNDER THE NEW GOVERNOR

The new governor, in taking over his charge, had discovered that in a subterranean prison, attended by a dumb gaoler, were two women, who had long been kept there by Gratus, and from the terrible existence they had led they had both been stricken with leprosy.

He gave orders that they should be liberated and sent to the hill outside the city, where, in the dismal caves and tombs, the lepers of Jerusalem were left to sink into death. In passing by the house of Hur, the women saw a young man sleeping at the gate, and knew him for son and brother, but hastened on so that he might rather think them dead than lepers. An old servant encountered them, however, and daily took them food.

When Ben Hur at length had news of the fate of his dear ones, every effort to discover them was vain, and, thinking them to be dead, he now devoted himself to raising an army to fight for the King of the Jews when He should come.

Now, at this time, the infant whom Balthasar had journeyed to Nazareth to look upon had grown into manhood,

and had been going about throughout Judæa teaching the common people to practise gentleness and mercy, to worship God in holiness, and to believe in Him and His son Jesus if they would be saved. The fame of His teaching had gradually spread to distant places, and although this was no princely conqueror, such as the Jews expected, there were already those who believed Jesus to be in very truth the Messiah.

Among these believers was Balthasar, whom Ben Hur met again on his way to look upon the Teacher he had worshipped as a babe. The young Jew accompanied the old man on his journey, and when he saw the Nazarene he recognised in Him the gentle face and pitying eyes that belonged to the little carpenter who gave him water to drink when the Roman guards were taking him to the galleys. Thrilled and fascinated though he was by this gentlest of teachers, he was not without a feeling of disappointment when he thought of all his preparations to raise an army that would fight with mortal weapons for the King of the Jews.

BEN HUR BECOMES A FOLLOWER OF JESUS OF NAZARETH

But from place to place he followed Jesus, observing Him closely, witnessing the miracles that He wrought, believing in Him, though still hoping that he might be called upon to fight for Him as an earthly prince, for he could not understand why the kingdom of Jesus was not of this world. So it came about that Ben Hur was one of the multitude that went up to Jerusalem with Jesus.

As they were passing the hill of the lepers two women ran down, and, throwing themselves at the feet of the Master, besought Him to make them clean. He saw Jesus bless them and tell them that their faith had made them clean, but, curious, and still a little doubting, Ben Hur lingered behind to see if it was even as the Master had said, and, behold, his mother and his sister stood before him restored to health.

It was required by the law that persons who had been cured of leprosy should tarry without the walls of Jerusalem for nine days before being allowed to return to their homes. Thus Ben Hur, who would not desert his mother and Tirzah during these nine days which they had to wait outside the city, was not present at those world-moving scenes when the Jewish multitude, disappointed at not finding in Jesus the conquering prince of earthly power whom they had expected, had turned against the gentle teacher of humiliation and holiness. Nay, in that short time the rabble and the priests had hounded Him to death and drawn from the reluctant Pontius Pilate consent to His execution. Ben Hur would now have raised his carefully drilled legions to rescue Jesus, but too late he discovered that all but two of his recruits had joined in the hostile rabble.

THE LAST THAT BEN HUR SAW OF HIS LORD AND MASTER

Among the multitude that awful day when Jesus was crucified on the hill of Calvary, Ben Hur stood, in company with Simonides and Balthasar, all believers that the figure on the central cross was that of the true Messiah. So affected by the dreadful scene was Balthasar that, before the earthquake had come to strike terror through all that multitude, his spirit had taken flight to be with Him who perished on the Cross.

It was not many years after this greatest event in the history of the world that Ben Hur, who had married the daughter of Simonides, determined to use his riches in the cause of Christianity, to which Simonides also consecrated his vast wealth. At Rome the infamous Emperor Nero was now at the height of his short but awful reign of persecution, and, by wholesale slaughter, he sought to reduce the growing numbers of Christians throughout his dominions.

HOW BEN HUR HELPED TO BUILD THE CATACOMBS OF ROME

But in these days of persecution the Christians clung tenaciously to their faith, and near the city of Rome we can see to this day the wonderful catacombs, or underground cities, consisting of endless tunnels and cells, and even little chapels, in which, fleeing from the wrath of the monster emperor, the Christians lived and worshipped God hidden from the light of day.

To the construction of these catacombs the fortunes of Ben Hur and Simonides were devoted, and there are no memorials of the early Christians and their devotion to the teaching of Christ more eloquent than these ancient ruins.

CONTINUED ON PAGE 5359

CONTINUED FROM PAGE 5208

WHAT THIS STORY TELLS US

THE City of Mexico has connected with it many quaint legends which date back to the time of the Spanish occupancy of this old town. They are genuine folk tales that have come down from lip to lip of a wonder-loving people. Among the learned and unlearned inhabitants alike they are cherished with warm affection, and are "told with a lively relish — to which is added, among the common people — a lively faith."

LEGENDS OF THE CITY OF MEXICO

THE LEGEND OF DOÑA BEATRICE

Once there lived in the city of Mexico a beautiful young girl, Doña Beatrice. She was as beautiful as the summer stars, and all the young men who saw her immediately became suitors. Among them were numbers of the noblest and the richest young men in Mexico. Doña Beatrice remained coldly indifferent to them all, until one night at a great ball she met a young Italian nobleman, Don Martin Scipoli. Then her indifference melted away like snow in the warm sunshine, for so handsome and so lovable was he that Doña Beatrice fell in love with him at first sight. The young nobleman on his side was entranced by the young girl's wonderful flower-like beauty.

Now it happened that Don Martin had a very bad temper and became furiously jealous of all the other lovers of the beautiful Doña Beatrice. When he was not making love to her, he spent his time picking quarrels and fighting duels with the young men of the city. So continual, indeed, were Don Martin's quarrels that Doña Beatrice became very unhappy, and there rose up in her heart a growing dread that her lover cared only for her beautiful face, and that when her loveliness was gone he would care for her no more.

Doña Beatrice thought and prayed over the matter day after day, and week after week, until there came to her a terrible resolve. She would test her lover, and prove whether it was for her beauty alone that he cared. So one day when her father was abroad, she, on one excuse or another, dismissed all the servants. Then she carried to her room a great brazier of burning coals. This she hung before the picture of Santa Lucia on the wall, and fervently prayed the saint to give her strength to carry out her dreadful purpose. Binding a wet handkerchief about her eyes, she bent over the brazier and blew upon the fire until the flames fanned her cheek. Then she plunged her beautiful face into the heart of the coals.

When the horrible deed was done, she draped herself from head to foot all in a virgin white veil and sent for Don Martin. Slowly she drew the veil aside and disclosed to him her face, hideous and scarred, save for her two beautiful eyes glowing like twin points of pure flame. For a moment her lover stood staring in horror. Then he gathered her into his arms. He had stood the test, and in all the years of their happy marriage, Doña Beatrice never had cause to fear that her husband loved her for her beauty alone.

THE PROUD LADY WHO TURNED A SOMERSAULT IN THE STREETS OF THE CITY

Long ago there lived in Mexico a rich, retired merchant, named Don Mendo Quroga y Saurez. So rich was he that all the people envied him for his great possessions. But all his money could not buy him love. When he was sick and old he became very lonely and sad.

Therefore he sent back to Spain to bring over his dead brother's daughter as a companion. But the old man was ill and crotchety, and the young girl was beautiful, selfish, and vain. Though she gladly received all the luxuries that were heaped upon her, she did not love her uncle, nor did she try in any way to make his life pleasanter. Dressing herself in rich satins and velvets, she rolled around in her uncle's carriage, so beauti-

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ful and so proud, that all the young men in the city immediately fell madly in love with her. But Doña Paz scornfully disdained their attentions, for she knew that when her uncle died she would become the richest woman in Mexico.

And so she did, but upon conditions that brought gall and wormwood to her pride. Throughout his long will, Don Mendo uniformly termed her his "beloved niece" and directed that all his estate should become hers. But — at the very end — there was named a condition that had to be fulfilled before she could so much as touch one penny of her great inheritance.

Thus read the will:

"And the condition that I now lay upon my beloved niece is this: That, being dressed in her richest ball dress, and wearing her most magnificent jewels, she shall go in an open coach to the Plaza Mayor at noonday; and that, being come to the Plaza Mayor, she shall walk to the very middle of it, she shall bow her head to the ground; and then, so bowing, she shall turn a somersault. And it is my will that if my beloved niece Paz does not comply precisely with this condition, within six months from the day on which I pass out of life, then of my possessions my beloved niece Paz shall have no part at all. And this condition I lay upon my beloved niece Paz that, in the bitterness of the shame of it, she may taste a little of the bitterness with which her cruelties have filled my dying years."

So overcome with fury and grief was Doña Paz at this condition that she immediately retired to her room, and for days, and weeks, and months nothing was seen of her. On the very last day of the six months named in the will the people of the city were greatly astonished to see the beautiful, wrought-iron doors of Don Mendo's house swung slowly open and through the doorway came Doña Paz, clothed in her richest ball dress and ablaze with jewels.

With her white face held high and her eyes down, the proud woman drove through the city streets into the crowded Plaza Mayor. Thence she dismounted, and, her servants making way for her, she walked to the centre of the square, where she had a rich carpet laid upon the stone pavement. There, in the very middle of the crowd, Doña Paz turned the somersault specified in her uncle's will and came into the inheritance of her wealth, and to the bitterness and shame of her overweening pride.

THE IRON SHOD WOMAN

There lived once in the city of Mexico a good priest who had a very singular housekeeper. The priest's best friend, who was a blacksmith, for some reason instinctively distrusted the old woman and urged the compadre to dismiss her, which he would not do.

One night the blacksmith was awakened by someone knocking at his door. He found two coloured men with a mule, which they asked him to shoe, saying it belonged to his friend, the priest, who was being called away on a sudden journey. When the blacksmith had nailed on the horseshoes the negroes led the mule away, and the blacksmith could see them beating her cruelly as they disappeared out of sight.

The next morning, being worried about the whole matter, the blacksmith went out to the priest's house, and knocked at the door, but no one answered. At last, however, the priest himself appeared, still half asleep. He said he had not gone on any journey, and had not sent his mule to be shod in the middle of the night. Then being thoroughly awake, he began to laugh at his friend for the way in which he had been fooled. The two men went to the old housekeeper's door to ask her if she knew anything of the matter. When they knocked there was no answer. Louder and louder they hammered on the door, until, at last, being thoroughly frightened, they broke it down.

Before them on the bed lay the old housekeeper dead, and, horrible sight! on her hands and feet were nailed the horseshoes the blacksmith had fastened to the hoofs of the mule! The terrified men agreed that the woman must have committed some great sin and the two negroes, who were devils, had changed her into a mule to punish her.

THE NEXT BOOK OF STORIES IS ON PAGE 5305.

WHAT THIS STORY TELLS US

THE schools of Canada, both higher and lower, are good, and are growing better. While they differ in excellence in different Provinces and in different districts in the same Province, more and more money is spent upon the free schools, and many great gifts have been made to the colleges and universities. In spite of the small population of Canada, some of her universities have a world-wide reputation. More and more attention is being given to the schools which deal with practical training in agriculture, mining and the like, and the future of Canadian education seems bright.

SCHOOLS AND SCHOOLMEN IN CANADA

THE two great nations of North America believe in education, as all free countries must if they are to remain free. In both of them, institutions for both higher and elementary education were established when people were few and poor, and have grown with increasing population and wealth, until now some of the largest and best equipped institutions in the world are in North America.

No country has planned more liberally for public education than Canada. In some of the Provinces one-eighteenth of the public land has been set aside for educational purposes, and as population increases, the land not yet sold will grow more valuable. British Columbia has set apart 2,000,000 acres for her Provincial university. Then, besides, taxes are levied for the support of the schools in the districts.

In Canada, the Provinces have control of education, and each has established a system suited to its own needs, and so what is true of the way schools are managed in your Province, may not be true in another Province, though there is a general likeness except in Quebec. Two things are settled in all of them, however. Education is free in the lower grades, and the children must attend a certain length of time. While the attendance law is not always enforced, in some districts it is hardly needed.

Ontario has the largest number in school, and spends the largest amount for education, though it does not spend so much on every child as the western Provinces do. Quebec has more schools and more teachers than any other Province, but does not spend so much money as Ontario. Prince Edward Island, with the smallest population, naturally has the fewest children in school.

Quebec, Ontario, Alberta and Saskatchewan have separate schools for Roman Catholics. The other Provinces have only one system of public schools, as in the United States, and parents who do not wish their children to attend them, must either support private schools or else send to schools supported by churches. Some of the church schools receive aid from the government if they meet certain requirements.

THE MEN WHO MANAGE THE PUBLIC SCHOOLS

In every Province, there is at least one officer in direct charge of the public schools, who is usually not changed when the government passes from one party to another. He is called Deputy Minister, Superintendent of Education, Superintendent of Public Instruction, or some such name, and has of course many assistants, who visit the schools, advise teachers and parents and the like. In Quebec, the man in charge of all the schools has two deputies, called secretaries, one for the Protestant schools, and the other for the Catholic schools. Some Provinces have a Minister of Education, who is a member of

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the Government, and changes with the change of party. In all the Provinces there is some sort of a board of education to direct, in a general way, those who manage the schools.

High Schools and Collegiate Institutes

Beyond the elementary schools are the high schools and collegiate institutes, supported wholly or in part by the public. Ontario has the best system of high schools, but other Provinces are gaining rapidly. In collegiate institutes, pupils sometimes can do some of the work required in college or university. Sometimes the higher schools are not entirely free, but small fees are charged.

Then, too, there are private schools and church schools which prepare for the universities. The different Provinces also support Normal Schools to prepare men and women for teaching. Some of these are first-class institutions in every respect. Some of the universities also have Departments of Education for the same purpose.

The Colleges

In Canada, the word college is not used in quite the same sense as in the United States. There, a college means an institution to which boys or girls go after they have been graduated from high school, or a preparatory school, or which they may enter by passing the entrance examinations. After a college course of three or four years, they receive a degree if they have passed their examinations. Such a college may, or may not, be a part of a university. In Canada, some colleges give degrees, some are parts of a university, some are "affiliated" with a university which gives the degree when satisfied that the students are worthy. Some teach their students on certain subjects, while in others they attend classes in a university college. Still others do not give degrees, but only prepare students for the university. The best-known institution of the last kind is Upper Canada College at Toronto, which has a wide reputation, and draws students from the United States.

In some of the Provinces there are agricultural colleges which teach scientific farming, and technical colleges which train men for engineering, mining and the like. Some of the universities also include similar colleges, and there are schools of domestic science to teach the proper management of a household.

The Universities of Canada

There are about twenty institutions with university powers in Canada, but not all of them are real universities. Some of them are too new to have developed all departments, or to have gained a wide reputation. Some of them are too poor to build the great laboratories necessary for advanced institutions in science, engineering and medicine, or to pay great scholars to join their faculties; for the fees which can be charged for university education, can never pay the cost of instruction. The remainder of the cost must be made up by the state, the church, or by gifts from private individuals. The wealthy men of Canada have made many large gifts to some of the universities.

Five of the Provinces have Provincial universities. These are New Brunswick, Ontario (the University of Toronto), Manitoba, Saskatchewan and Alberta, while British Columbia has begun to do the same. McGill University was founded by a private individual, and has been endowed by others. The other universities are more or less under the care of different churches.

The best-known universities in Canada are Laval, the great Roman Catholic institution at Quebec, with a branch in Montreal; McGill, in Montreal, with its many schools and affiliated colleges; Queen's, at Kingston, founded by the Presbyterian Church, but now attended by many of other denominations, and the University of Toronto, the largest of them all. In all of them, as well as in some of the less-known institutions, are great scholars, some trained abroad, others in the United States, and still others products of Canadian institutions. The university authorities have sought the men best suited to their needs, wherever they were to be found. One may often find in a Canadian university faculty men trained in Scotland, England, Ireland, Germany, France, the United States and Canada.

FOUR HEADS OF CANADIAN INSTITUTIONS

William Peterson, LL. D., Principal of McGill University since 1895, was educated at Edinburgh, Gottingen and Oxford, and before coming to Canada was Assistant Professor in the University of Edinburgh, and Principal of University College, Dundee.

Robert Alexander Falconer, D. D., LL. D., President of the University of Toronto since 1907, studied at Edinburgh, Leipzig, Berlin and Marburg, and served as Professor in and Principal of Pine Hill College, Halifax. He was born on Prince Edward Island.

Very Rev. Daniel Miner Gordon, D. D., LL. D., Principal of Queen's University, Kingston, since 1902, was previously Pastor of St. Andrew's Church, Halifax, and later Professor in Halifax Presbyterian College.

Henry William Auden, M. A., Principal of Upper Canada College since 1903, was previously Sixth Form Master and Librarian, Fettes College, Edinburgh, 1891-1903. Under his charge the prosperity of the institution has continued.

FOUR EDUCATIONAL LEADERS

Dr. George W. Parmelee, English Secretary (Deputy Minister) of the Department of Public Instruction for Quebec since 1891, was previously Professor of English Language and Literature in McGill Normal School, Montreal.

A. H. Mackay, LL. D., Superintendent of Education for Nova Scotia since 1891, was previously Principal of the Pictou Academy, and of the Halifax County Academy, and Lecturer in Biology in the University of Dalhousie.

Duncan Stewart MacKenzie, Deputy Minister of Education for Alberta since the organisation of the Province in 1905, was previously Deputy Commissioner of Education for the Northwest Territories.

Robert Fletcher, Deputy Minister of Education for Manitoba since 1903, had served as Mathematical Master in the Collegiate Institute at Portage la Prairie, and as Lecturer in Mathematics at St. John's College, Winnipeg.

TWO MORE CANADIAN INSTITUTIONS

Photograph by Kissock, Montreal.

This view of the campus of Queen's University shows Ontario Hall (to the left), Fleming Hall, and John Carruthers Hall. All of them are used by the School of Mining, which is one of the strongest departments of the University. The Library and the Theological Buildings, not shown in the picture, are perhaps the most attractive structures.

Photograph by Pringle and Booth, Toronto.

Upper Canada College, in Toronto, occupies imposing buildings, on an attractive site, beyond the University. In it many boys have been well prepared for the universities, or have received training which has been of service in the duties of life. Its patronage comes from many directions. Many old pupils, though they may live far away, send their sons back to the institution.

FABLES OF ÆSOP THE SLAVE IN FRENCH

The English versions of these fables are on page 3310.

LE VILLAGEOIS ET LA VIPÈRE

Par une froide journée d'hiver, un villageois trouva sous une haie une vipère qui était presque morte de froid. L'homme eut pitié de la pauvre bête, l'emporta chez lui et la déposa sur un tapis devant un bon feu. Au bout de quelque temps, la chaleur ranima la vipère qui se mit aussitôt à siffler et à menacer de mordre les enfants.

Le villageois, entendant ses enfants crier, entra en courant, saisit un bâton et tua la vipère en disant : " Est-ce ainsi que tu récompenses ceux qui essayent de te sauver la vie ? "

Ceux qui n'ont pas de reconnaissance pour les bienfaits, n'en reçoivent pas d'autres.

LE RENARD ET LA CHÈVRE

Un renard, un jour, tomba dans un puits et ne put en sortir. Quelques heures après, une chèvre passa par là, et, ayant soif, elle demanda au renard si l'eau était bonne.

" Elle est si bonne, si douce," dit le renard, " que j'en ai bu tant que je crains d'être malade."

Là-dessus, la chèvre, sans plus d'hésitation, sauta dans le puits afin de boire. Le renard aussitôt bondit sur son dos, et réussit ainsi à sortir du puits, laissant à la pauvre chèvre le soin de s'échapper comme elle pourrait.

Examinez avec soin les conseils de ceux que vous ne connaissez pas.

L'ENFANT QUI CRIAIT "AU LOUP"

Il y avait une fois un petit berger qui gardait un troupeau de moutons dans les champs. Par plaisanterie, il criait souvent : " Au loup ! Au loup ! "

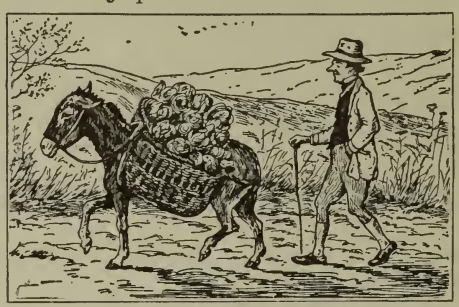
A ce cri, les hommes qui travaillaient dans les champs voisins, couraient au secours, mais après avoir été trompés deux ou trois fois de cette manière, ils résolurent de ne plus faire attention aux cris de l'enfant.

Quelque temps après, un loup vint réellement et le petit berger appela pour de bon. Mais personne ne s'inquiéta de ses cris, et ainsi, ses moutons furent tués par le loup.

Si nous mentons, personne ne nous croira, même quand nous dirons la vérité.

JUPITER ET L'ÂNE

Un âne, appartenant à un jardinier, étant las de porter chaque jour une charge de choux au marché, pria le dieu Jupiter de lui donner un nouveau maître. Jupiter consentit à lui donner



un tuilier qui l'envoya chaque jour au marché avec une charge de tuiles.

Le pauvre baudet, trouvant sa tâche plus pénible que jamais, demanda au dieu de changer encore une fois son maître. Cette fois, Jupiter lui donna un tanneur, qui le traita plus durement et cruellement encore que ses deux autres maîtres.

Quand ce fût trop tard, l'âne souhaita d'être resté avec son premier maître.

Soyez satisfait de votre sort.

LE RENARD ET LE LION

La première fois qu'un renard vit un lion, et entendit son terrible rugissement, il fut si effrayé qu'il se mit à trembler, étendu à terre, et qu'il mourût presque de terreur.

La fois suivante, il fut moins effrayé du roi des animaux, et osa le regarder timidement. La troisième fois que les deux animaux se rencontrèrent, le renard avait perdu toute crainte, et il s'approcha froidement du lion et se mit à lui causer comme s'il eût été un vieil ami.

La familiarité engendre le mépris.

A POEM OF THE SKY

IN any selection from the great English poet, Shelley, this poem always finds a place, as it is at once characteristic of the author and presents in the most finished poetic style, with a rare wealth of imagery and pictorial truth, a simple scientific explanation of how clouds are formed. We could tell in a very few words, of course, the process of Nature which results in the formation and the dissolving of a cloud, but the poet has here chosen to show us that these simple facts can be clothed with beautiful words which invest them with imaginative grandeur.

THE CLOUD

CONTINUED FROM 5142

I BRING fresh showers for the thirsting flowers,
From the seas and the streams;
I bear light shade for the leaves when laid
In their noonday dreams.
From my wings are shaken the dews that waken
The sweet birds every one,
When rocked to rest on their mother's breast,
As she dances about the sun.
I wield the flail of the lashing hail,
And whiten the green plains under;
And then again I dissolve it in rain,
And laugh as I pass in thunder.

I sift the snow on the mountains below,
And their great pines groan aghast;
And all the night 'tis my pillow white,
While I sleep in the arms of the blast.
Sublime on the towers of my skyey bowers,
Lightning, my pilot, sits;
In a cavern under is fettered the thunder,
It struggles and howls at fits.
Over earth and ocean, with gentle motion,
This pilot is guiding me,
Lured by the love of the genii that move
In the depths of the purple sea;
Over the rills, and the crags, and the hills,
Over the lakes and the plains,
Wherever he dream, under mountain or stream,
The Spirit he loves remains;
And I all the while bask in heaven's blue smile,
Whilst he is dissolving in rains.

The sanguine sunrise, with his meteor eyes,
And his burning plumes outspread,
Leaps on the back of my sailing rack,
When the morning star shines dead.
As, on the jag of a mountain crag
Which an earthquake rocks and swings,
An eagle, alit, one moment may sit
In the light of its golden wings;
And when sunset may breathe, from the lit sea beneath,
Its ardours of rest and of love,
And the crimson pall of eve may fall
From the depths of heaven above,
With wings folded I rest on mine airy nest,
As still as a brooding dove.

That orbèd maiden, with white fire laden,
Whom mortals call the moon,
Glides glimmering o'er my fleece-like floor,
By the midnight breezes strewn;
And wherever the beat of her unseen feet,
Which only the angels hear,
May have broken the woof of my tent's thin roof,
The stars peep behind her and peer;
And I laugh to see them whirl and flee,
Like a swarm of golden bees,
When I widen the rent in my wind-built tent,
Till the calm rivers, lakes, and seas,
Like strips of the sky fallen through me on high,
Are each paved with the moon and these.

I bind the sun's throne with a burning zone,
And the moon's with a girdle of pearl;
The volcanoes are dim, and the stars reel and swim,
When the whirlwinds my banner unfurl.
From cape to cape with a bridge-like shape,
Over a torrent sea,
Sunbeam-proof, I hang like a roof,
The mountains its columns be.
The triumphal arch through which I march
With hurricane, fire, and snow,
When the powers of the air are chained to my chair,
Is the million-coloured bow;
The sphere-fire above its soft colours wove,
While the moist earth was laughing below.

I am the daughter of earth and water,
And the nursling of the sky;
I pass through the pores of the ocean and shores;
I change, but I cannot die.
For after the rain, when, with never a stain,
The pavilion of heaven is bare,
And the winds and sunbeams, with their convex gleams,
Build up the blue dome of air—
I silently laugh at my own cenotaph,
And out of the caverns of rain,
Like a child from the womb, like a ghost from the tomb,
I arise and upbuild it again.

THE BETTER LAND

Although Mrs. Hemans was a somewhat sentimental poet, and inclined to dwell too much on the gloomy side of life, a good many of her pieces are likely long to endure, and none more likely than this song, which has been set to very appropriate music. The sentiment here is natural and unstrained, and, as it touches with dramatic intensity the longing of every feeling heart, it is no wonder that "The Better Land" has so long enjoyed popular favour.

I HEAR thee speak of the better land,
Thou call'st its children a happy band ;
Mother ! oh, where is that radiant shore ?
Shall we not seek it, and weep no more ?
Is it where the flower of the orange blows,
And the fire-flies glance through the myrtle boughs ?
Not there ; not there, my child

Is it where the feathery palm-trees rise,
And the date grows ripe under sunny skies ?
Or 'midst the green islands of glittering seas,
Where fragrant forests perfume the breeze,
And strange bright birds on their starry wings
Bear the rich hues of all glorious things ?
Not there ; not there, my child.

Is it far away in some region old,
Where the rivers wander o'er sands of gold ?
Where the burning rays of the ruby shine,
And the diamond lights up the secret mine,
And the pearl gleams forth from the coral strand—
Is it there, sweet mother, that better land ?
Not there, not there, my child.

Eye hath not seen it, my gentle boy,
Ear hath not heard its deep songs of joy ;
Dreams cannot picture a world so fair,
Sorrow and death may not enter there ;
Time doth not breathe on its fadeless bloom ;
For beyond the clouds, and beyond the tomb,
It is there ; it is there, my child.

THE KING'S PICTURE

In this poem, by an American writer named Helen B. Bostwick, we have a picturesque illustration of the old saying that there is some touch of good in all things, and that, even where we least expect it, some virtue may be found.

THE king from the council chamber
Came, weary and sore of heart ;
He called to Iliff, the painter,
And spoke to him thus apart :
" I'm sickened of faces ignoble,
Hypocrites, cowards, and knaves ;
I shall shrink in their shrunken measure,
Chief slave in a realm of slaves.

" Paint me a true man's picture,
Gracious, and wise, and good,
Dowered with the strength of heroes
And the beauty of womanhood.
It shall hang in my inmost chamber,
That, thither when I retire,
It may fill my soul with its grandeur,
And warm it with sacred fire."

So the artist painted the picture,
And it hung in the palace hall ;
Never a thing so lovely
Had garnished the stately wall.
The king, with head uncovered,
Gazed on it with rapt delight,
Till it suddenly wore strange meaning—
Baffled his questioning sight.

For the form was the supplest courtier's,
Perfect in every limb ;
But the bearing was that of the henchman,
Who filled the flagons for him ;
The brow was a priest's, who pondered
His parchment early and late ;
The eye was the wandering minstrel's,
Who sang at the palace gate.

The lips, half sad and half mirthful,
With a fitful trembling grace,
Were the very lips of a woman
He had kissed in the market-place ;
But the smiles which her curves transfigured,
As a rose with its shimmer of dew,
Was the smile of the wife who loved him—
Queen Ethelyn, good and true.

Then, " Learn, O king," said the artist,
" This truth that the picture tells—
That in every form of the human
Some hint of the highest dwells ;
That, scanning each living temple
For the place where the veil is thin,
We may gather by beautiful glimpses
The form of the God within."

PLANTING THE APPLE-TREE

William Cullen Bryant, the American poet, was the author of these verses, which, in all likelihood, were suggested to him by his having himself planted an apple-tree. The planting of any tree is a favourite subject of the poets, leading the mind in the most natural way to contemplate the continuous growth of the tree possibly for centuries after the hand that planted it lies still. Tree-planters are at work all over the world, however, who never give a thought to the poetic side of their occupation, yet their labours are as suggestive of romance as any we can engage in.

COME, let us plant the apple-tree,
Cleave the tough greensward with the spade,
Wide let its hollow bed be made ;
There gently lay the roots, and there
Sift the dark mould with kindly care,
And press it o'er them tenderly,
As, round the sleeping infant's feet,
We softly fold the cradle-sheet ;
So plant we the apple-tree.

What plant we in this apple-tree ?
Buds, which the breath of summer days
Shall lengthen into leafy sprays ;
Boughs, where the thrush, with crimson breast,
Shall haunt and sing, and hide her nest ;
We plant, upon the sunny lea,
A shadow for the noontide hour,
A shelter from the summer shower,
When we plant the apple-tree.

What plant we in this apple-tree ?
Sweets for a hundred flowery springs
To load the May-wind's restless wings,
When from the orchard-row he pours
Its fragrance through our open doors ;
A world of blossoms for the bee,
Flowers for the sick girl's silent room,
For the glad infant sprigs of bloom,
We plant with the apple-tree.

What plant we in this apple-tree ?
Fruits that shall swell in sunny June,
And redden in the August noon,
And drop, when gentle airs come by,
That fan the blue September sky,
While children come, with cries of glee,
And seek them where the fragrant grass
Betrays their bed to those who pass,
At the foot of the apple-tree.

The fruitage of this apple-tree,
Winds, and our flag of stripe and star,
Shall bear to coasts that lie afar,
Where men shall wonder at the view,

And ask in what fair climes they grew;
And sojourners beyond the sea
Shall think of childhood's careless day,
And long, long hours of summer play,
In the shade of the apple-tree.

Each year shall give this apple-tree
A broader flush of roseate bloom,
A deeper maze of verdurous gloom,
And loosen, when the frost clouds lower,
The crisp brown leaves in thicker shower.
The years shall come and pass, but we
Shall hear no longer, where we lie,
The summer's songs, the autumn's sigh,
In the boughs of the apple-tree.

"Who planted this old apple-tree?"
The children of that distant day
Thus to some aged man shall say;
And, gazing on its mossy stem,
The grey-haired man shall answer them:
"A poet of the land was he,
Born in the rude but good old times:
'Tis said he made some quaint old rhymes,
On planting the apple-tree."

RAIN IN SUMMER

Longfellow, the writer of the following poem, is one of the great prophets of cheerfulness, and here he teaches us the very necessary lesson that though a rainy day may not be quite to our liking, it may be a mercy to the farmers, and, indirectly, a benefit to us as well.

How beautiful is the rain!
After the dust and the heat,
In the broad and fiery street,
In the narrow lane,
How beautiful is the rain!

How it clatters along the roofs,
Like the tramp of hoofs!
How it gushes and struggles out
From the throat of the overflowing spout!
Across the window-pane
It pours and pours;
And swift and wide,
With a muddy tide,
Like a river down the gutter roars
The rain, the welcome rain!

The sick man from his chamber looks
At the twisted brooks;
He can feel the cool
Breath of each little pool;
His fevered brain
Grows calm again,
And he breathes a blessing on the rain.

From the neighbouring school
Come the boys,
With more than their wonted noise
And commotion;
And down the wet streets
Sail their mimic fleets,
Till the treacherous pool
Engulfs them in its whirling
And turbulent ocean.
In the country on every side,
Where far and wide,
Like a leopard's tawny and spotted hide
Stretches the plain,
To the dry grass and the drier grain
How welcome is the rain!

In the furrowed land
The toilsome and patient oxen stand;
Lifting the yoke-encumbered head,
With their dilated nostrils spread,
They silently inhale
The clover-scented gale,
And the vapours that arise
From the well-watered and smoking soil.
For this rest in the furrow after toil
Their large and lustrous eyes
Seem to thank the Lord,
More than man's spoken word.

Near at hand,
From under the sheltering trees,
The farmer sees
His pastures and his fields of grain,
As they bend their tops
To the numberless beating drops
Of the incessant rain.
He counts it as no sin
That he sees therein
Only his own thrift and gain.

SOMEBODY'S MOTHER

We have here a familiar example of the sentimental verse which was very popular a generation ago, but is now passing out of favour. We can scarcely dignify it with the name of poetry, but, as there can be no question that its sentiment is entirely worthy, and it is expressed in simple and unaffected words, we venture to give it a place in these selections.

The woman was old and ragged and gray,
And bent with the chill of the winter's day;

The street was wet with a recent snow,
And the woman's feet were aged and slow.

She stood at the crossing, and waited long,
Alone, uncared for, amid the throng

Of human beings who passed her by,
Nor heeded the glance of her anxious eye.

Down the street, with laughter and shout,
Glad in the freedom of "school let out,"

Came the boys like a flock of sheep,
Hailing the snow piled white and deep.

Past the woman so old and gray
Hastened the children on their way,

Nor offered a helping hand to her—
So meek, so timid, afraid to stir

Lest the carriage wheels or the horses' feet
Should crowd her down in the slippery street.

At last came one of the merry troop—
The gayest laddie of all the group;

He paused beside her, and whispered low,
"I'll help you across if you wish to go."

Her aged hand on his strong young arm
She placed, and so, without hurt or harm,

He guided the trembling feet along,
Proud that his own were firm and strong.

Then back again to his friends he went,
His young heart happy and well content.

"She's somebody's mother, boys, you know,
For all she's aged and poor and slow;

"And I hope some fellow will lend a hand
To help *my* mother, you understand,

"If ever she's poor and old and gray,
When her own dear boy is far away."

And "somebody's mother" bowed low her head
In her home that night, and the prayer she said

Was: "God, be kind to the noble boy,
Who is somebody's son and pride and joy!"

AN INDIAN AT THE BURIAL-PLACE OF HIS FATHERS

William Cullen Bryant seeks in this fine poem to suggest the thoughts that come to a "noble red man"—as the Indian of America is sometimes, and not too truly, described—visiting the burial-place of his fathers. The red man is a picturesque figure, but he is at best a savage, and the peaceful peopling of his country by white men is a better thing than leaving it to the wild misrule of bloodthirsty tribes. The savage is an attractive creature in poetry and fiction, but the civilised man, with all his faults, does more to help the world along and promote the cause of humanity.

It is the spot I came to seek—
My father's ancient burial-place,
Ere from these vales, ashamed and weak,
Withdrew our wasted race.
It is the spot—I know it well—
Of which our old traditions tell.

For here the upland bank sends out
A ridge toward the river-side ;
I know the shaggy hills about,
The meadows smooth and wide,
The plains, that, toward the southern sky,
Fenced east and west by mountains lie.

A white man, gazing on the scene,
Would say a lovely spot was here,
And praise the lawns, so fresh and green,
Between the hills so sheer.
I like it not—I would the plain
Lay in its tall old groves again.

The sheep are on the slopes around,
The cattle in the meadows feed,
And labourers turn the crumbling ground,
Or drop the yellow seed,
And prancing steeds, in trappings gay,
Whirl the bright chariot o'er the way.

Methinks it were a nobler sight
To see these vales in woods arrayed,
Their summits in the golden light,
Their trunks in grateful shade,
And herds of deer, that bounding go
O'er rills and prostrate trees below.

And then to mark the lord of all,
The forest hero trained to wars,
Quivered and plumed, and lithe and tall,
And seamed with glorious scars,
Walk forth, amid his reign, to dare
The wolf, and grapple with the bear.

This bank, in which the dead were laid,
Was sacred when its soil was ours ;
Hither the artless Indian maid
Brought wreaths of beads and flowers,
And the grey chief and gifted seer
Worshipped the god of thunders here.

But now the wheat is green and high
On clods that hid the warrior's breast,
And scattered in the furrows lie
The weapons of his rest,
And there, in the loose sand, is thrown
Of his large arm the mouldering bone.

Ah, little thought the strong and brave,
Who bore the lifeless chieftain forth ;
Or the young wife, that weeping gave
Her first-born to the earth,
That the pale race, who waste us now,
Among their bones should guide the plough.

They waste us—ay—like April snow
In the warm noon, we shrink away ;
And fast they follow, as we go
Towards the setting day—
Till they shall fill the land, and we
Are driven into the western sea.

But I behold a fearful sign,
To which the white men's eyes are blind ;
Their race may vanish hence, like mine,
And leave no trace behind,
Save ruins o'er the region spread,
And the white stones above the dead.

Before these fields were shorn and tilled,
Full to the brim our rivers flowed ;
The melody of waters filled
The fresh and boundless wood ;
And torrents dashed, and rivulets played,
And fountains spouted in the shade.

Those grateful sounds are heard no more,
The springs are silent in the sun,
The rivers by the blackened shore,
With lessening current run ;
The realm our tribes are crushed to get
May be a barren desert yet.

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* THE FLIGHT OF YOUTH

Nothing that the American poet, R. H. Stoddard, has written is more certain of remembrance than these beautiful lines from his pen. There is a glorious sense of life that comes to us all in our youth and makes us feel that life is immortal. As age creeps on this feeling wears away, and that is why the wise men say "If Youth but knew!" meaning that if youth had also the wisdom of age nothing would seem, and little would be, impossible.

There are gains for all our losses,
There are balms for all our pains ;
But when youth, the dream, departs,
It takes something from our hearts,
And it never comes again.

We are stronger, and are better,
Under manhood's sterner reign ;
Still, we feel that something sweet
Followed youth, with flying feet,
And will never come again.

Something beautiful is vanished,
And we sigh for it in vain ;
We behold it everywhere,
On the earth, and in the air,
But it never comes again.

QUIET WORK

These verses, by Matthew Arnold, take the form of a sonnet, or a little poem of fourteen lines, in which the reader will notice that the last six lines are not merely a continuation of the first eight, but they also contain a change of thought, which is proper to this form of verse.

One lesson, Nature, let me learn of thee,
One lesson which in every wind is blown ;
One lesson of two duties kept at one
Though the loud world proclaim their enmity

Of toil unsevered from tranquillity !
Of labour, that in lasting fruit outgrows
Far nobler schemes, accomplished in repose,
Too great for haste, too high for rivalry !

Yes, while on earth a thousand discords ring,
Man's fitful uproar mingling with his toil,
Still do thy sleepless ministers move on,

Their glorious tasks in silence perfecting ;
Still working, blaming still our vain turmoil,
Labourers that shall not fail, when man is gone.

* From "Poems of Richard Henry Stoddard," copyright, 1880, by Charles Scribner's Sons.

IT IS COMMON

The anonymous American poet who has written these lines expresses a thought that has often arisen in the poems we have read: that the best things of this life are really the commonest, if we could only be persuaded of this. The word "fall" in the first line of the fourth verse is oftener used in America than elsewhere as another name for autumn—the time when the falling leaves cover the woodland.

So are the stars and the arching skies,
So are the smiles in the children's eyes;
Common the life-giving breath of the spring;
So are the songs which the wild birds sing—
Blessed be God, they are common!

Common the grass in its glowing green;
So is the water's glistening sheen;
Common the springs of love and mirth;
So are the holiest gifts of earth.

Common the fragrance of rosy June;
So is the generous harvest moon,
So are the towering, mighty hills,
So are the twittering, trickling rills.

Common the beautiful tints of the fall;
So is the sun which is over all.
Common the rain with its pattering feet;
So is the bread which we daily eat—
Blessed be God, it is common!

So is the sea in its wild unrest,
Kissing for ever the earth's brown breast;
So is the voice of undying prayer,
Evermore piercing the ambient air.

So unto all are the "promises" given,
So unto all is the hope of heaven;
Common the rest from the weary strife,
So is the life which is after life—
Blessed be God, it is common!

ALL THE CHILDREN

These merry verses bear no author's name, but are possibly of American origin. Whoever wrote them had a happy touch of humour and must have loved the little ones, if we may judge by the pretty things he, or she, says about them.

I suppose if all the children
Who have lived through the ages long
Were collected and inspected,
They would make a wondrous throng.
Oh, the babble of the Babel!
Oh, the flutter and the fuss!
To begin with Cain and Abel,
And to finish up with us.

Think of all the men and women
Who are now and who have been—
Every nation since creation
That this world of ours has seen,
And of all of them, not any
But was once a baby small;
While of children, oh, how many
Have not grown up at all!

Some have never laughed or spoken,
Never used their rosy feet;
Some have even flown to heaven
Ere they knew that earth was sweet;
And, indeed, I wonder whether,
If we reckon every birth,
And bring such a flock together,
There is room for them on earth.

Who will wash their smiling faces?
Who their saucy ears will box?
Who will dress them and caress them?
Who will darn their little socks?
Where are arms enough to hold them?
Hands to pat each shining head?
Who will praise them? Who will scold them?
Who will pack them off to bed?

Little happy Christian children,
Little savage children too,
In all stages, of all ages
That our planet ever knew;
Little princes and princesses,
Little beggars, wan and faint,
Some in very handsome dresses,
Naked some, bedaubed with paint.

Only think of the confusion
Such a motley crowd would make,
And the clatter of their chatter
And the things that they would break!
Oh, the babble of the Babel!
Oh, the flutter and the fuss!
To begin with Cain and Abel,
And to finish up with us.

A STORY OF LIFE

Jean Ingelow, the English poetess who wrote the famous ballad "High Tide on the Coast of Lincolnshire," was the author of this plaintive little summary of a human life.

Sweet is childhood; childhood's over,
Kiss and part.
Sweet is youth; but youth's a rover—
So's my heart.
Sweet is rest; but all by showing
Toil is nigh.
We must go. Alas! the going,
Say, "Good-bye."

A VISION OF THE FUTURE

The following is a short extract from Tennyson's famous poem of "Locksley Hall," and is quoted here as appropriate to these days of ours, when the wonder-ships that can sail the skies have actually come to pass. Perhaps the day may not be so very far distant when those greater wonders of the poet's imagination may yet be realised.

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that would be;
Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;
Heard the heavens fill with shouting, and there rained a ghastly dew
From the nation's airy navies grappling in the central blue;
Far along the world-wide whisper of the south wind rushing warm,
With the standards of the people plunging thro' the thunder-storm;
Till the war-drum throbbed no longer, and the battle-flags were furled
In the Parliament of man, the Federation of the world.
There the common-sense of most shall hold a fretful realm in awe,
And the kindly earth shall slumber, lapt in universal law.

GENTLE JESUS, MEEK AND MILD

This tiny hymn for little children was written by Charles Wesley about the year 1740, and is the only one of his children's hymns still sung in our churches to-day. It has been said that he wrote it for his own children; but this cannot be correct, as he did not marry until long afterwards.

Gentle Jesus, meek and mild,
Look upon this little child;
Pity my simplicity,
Suffer me to come to Thee.

Fain I would to Thee be brought,
Gracious God, forbid it not;
In the kingdom of Thy grace
Grant Thy little child a place.

THE APPLE WINDS

These charming verses, by Mr. Will H. Ogilvie, convey a lesson worth remembering, for in our care-free days of youth we are apt to welcome the winds that blow us good without thought of those to whom they may blow ill. The verses are printed with Mr. Ogilvie's permission.

I HAD no thought of stormy sky
In days when I was small,
And all the world was bounded by
Our ten-foot garden wall.
I never thought the storm-winds came
From wrecks and ribboned sails;
I never knew them by their name
Of equinoctial gales;
But sweeping round the orchard bends,
Knee-deep in leaves of brown,
I only knew them as the friends
That shook the apples down!

And I have travelled far and far
And weary miles since then,
And battled where the storm-winds are
That wreck the lives of men;
And back among the lime-tree leaves,
Grown gold before they fall,
I hear the song that autumn weaves
When first the wild winds call;
And though their hand is chill and cold,
Their face has winter's frown,
I know them for the friends of old
That shook the apples down!

I THINK WHEN I READ

Few children's hymns are better known or more often heard in Sunday schools than this beautiful hymn by Mrs. Luke.

I THINK when I read that sweet story of old,
When Jesus was here among men,
How He called little children as lambs to His fold—
I should like to have been with Him then.
I wish that His hands had been placed on my head,
That His arm had been thrown around me,
And that I might have seen His kind look when he said:
"Let the little ones come unto Me."

Yet still to His footstool in prayer I may go,
And ask for a share in His love;
And if I thus earnestly seek Him below,
I shall see Him and hear Him above,
In that beautiful place He has gone to prepare
For all that are washed and forgiven;
And many dear children are gathering there,
"For of such is the kingdom of heaven."

SAD VENTURES

This poetic fancy, which appeared in an American newspaper, tells very prettily the triumph of faith; for without faith in the goodness and mercy of God, many other virtues will not help us greatly. That, at least, is the message of this little poem picked from the pages of a newspaper.

I STOOD and watched my ships go out,
Each, one by one, unmooring, free,
What time the quiet harbour filled
With flood-tide from the sea.

The first that sailed, her name was Joy;
She spread a smooth, white, shining sail,
And eastward drove with bending spars
Before the sighing gale.

Another sailed, her name was Hope;
No cargo in her hold she bore;
Thinking to find in western lands
Of merchandise a store.

The next that sailed, her name was Love;
She showed a red flag at her mast—
A flag as red as blood she showed,
And she sped south right fast.

The last that sailed, her name was Faith;
Slowly she took her passage forth,
Tacked and lay to; at last she steered
A straight course for the north.

My gallant ships, they sailed away
Over the shimmering summer sea;
I stood at watch for many a day—
But one came back to me.

For Joy was caught by pirate Pain;
Hope ran upon a hidden reef,
And Love took fire and foundered fast
In whelming seas of grief.

Faith came at last, storm-beat and torn—
She recompensed me all my loss;
For, as a cargo safe, she brought
A crown linked to a cross.

LIFE

Mrs. Barbauld, a well-known writer in her day, was the author of these thoughtful lines, in which there is the quiet beauty of a contented and hopeful spirit.

LIFE! I know not what thou art,
But know that thou and I must part;
And when, or how, or where we met
I own to me's a secret yet.

Life! We have been long together,
Through pleasant and through cloudy weather.
'Tis hard to part where friends are dear,
Perhaps 'twill cost a sigh, a tear.
Then steal away, give little warning;
Choose thine own time;
Say not Good-night, but in some brighter clime
Bid me Good-morning.

GOD SAVE THE KING

England's anthem is not the highest form of poetry, if we look at it entirely from the standpoint of literature. Many patriotic Englishmen object to the second verse, as ordinarily printed, and declare that it is unworthy of a great nation. Many attempts have been made to improve it, and we give here a new second verse that is sometimes sung by those who do not care to sing the second verse of the original, which some of our English friends say should not be printed in The Book of Knowledge. We give the first and third verses, followed by the suggested second verse. The anthem has probably grown from an old rebel song, and is believed to have been set to music, oddly enough, by John Bull, a musician and poet, who was organist to King James I., and who died in 1628.

GOD save our gracious King,
Long live our noble King,
God save the King!
Send him victorious,
Happy and glorious,
Long to reign over us,
God save the King!

Thy choicest gifts in store
On him be pleased to pour,
Long may he reign.
May he defend our laws,
And ever give us cause,
To sing with heart and voice,
God save the King!

SUGGESTED SECOND VERSE BY LORD NORTON

O God, our cry for peace,
And prayer that war may cease,
Do Thou, Lord, hear!
Then shall we Thee adore,
And praise Thee evermore,
Singing with heart and voice,
God save the King!

LITTLE VERSES FOR VERY LITTLE PEOPLE

THERE was a frog lived in a well,
Kitty alone, Kitty alone;
There was a frog lived in a well,
Kitty alone and I.

There was a frog lived in a well,
And a gay mouse in a mill.
Cock me cary, Kitty alone,
Kitty alone and I.

The frog he would a-wooing ride;
Kitty alone, Kitty alone;
The frog he would a-wooing ride,
And on a snail he got astride.
Cock me cary, Kitty alone.

He rode till he came to My Lady Mouse Hall,
Kitty alone, Kitty alone;
He rode till he came to My Lady Mouse Hall,
And there he did both knock and call.
Cock me cary, Kitty alone.

Quoth he, "Miss Mouse, I'm come to thee,"
Kitty alone, Kitty alone;
Quoth he, "Miss Mouse, I'm come to thee,
To see if thou canst fancy me."
Cock me cary, Kitty alone.

Quoth she, "Answer I'll give you none,"
Kitty alone, Kitty alone;
Quoth she, "Answer I'll give you none,
Until my Uncle Rat comes home."
Cock me cary, Kitty alone.

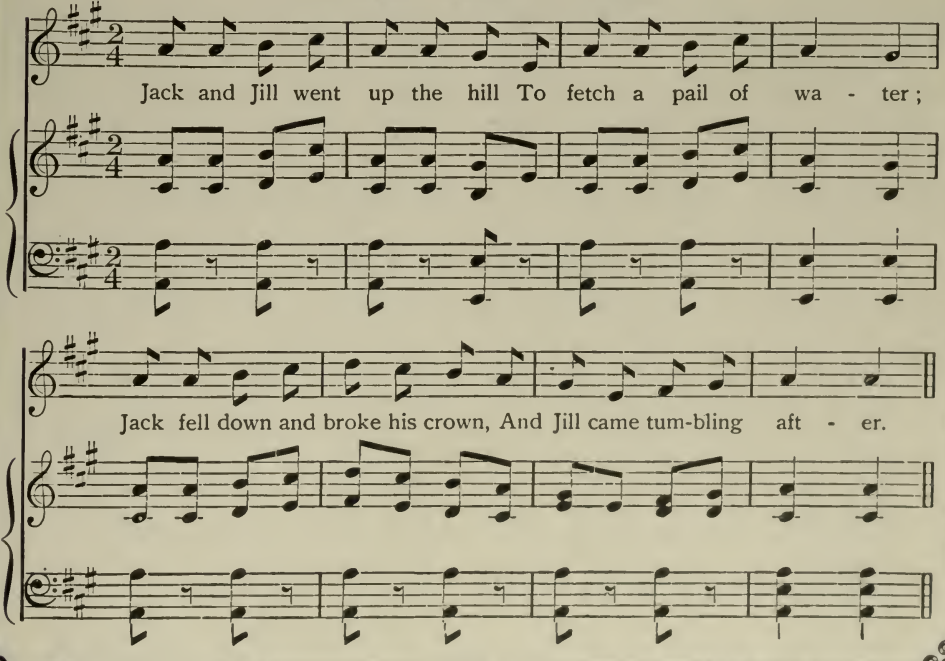
And when her Uncle Rat came home,
Kitty alone, Kitty alone;
And when her Uncle Rat came home,
"Who's been here since I've been gone?"
Cock me cary, Kitty alone.

"Sir, there's been a worthy gentleman,"
Kitty alone, Kitty alone;
"Sir, there's been a worthy gentleman,
That's been here since you've been gone."
Cock me cary, Kitty alone.

The frog he came whistling through the brook,
Kitty alone, Kitty alone;
The frog he came whistling through the brook,
And there he met with a dainty duck.
Cock me cary, Kitty alone.

This duck she swallowed him up with a cluck,
Kitty alone, Kitty alone;
This duck she swallowed him up with a cluck,
So there's an end of my history book.
Cock me cary, Kitty alone,
Kitty alone and I.

JACK AND JILL

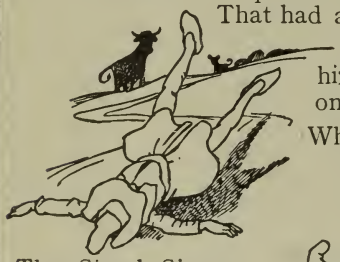


SIMPLE SIMON MET A PIEMAN

Simple Simon met a pieman
Going to the fair;
Says Simple Simon to the pieman:
"Let me taste your ware."
Says the pieman unto Simon:
"First give me your penny!"
Says Simple Simon to the pieman:

"Indeed, I have not any."

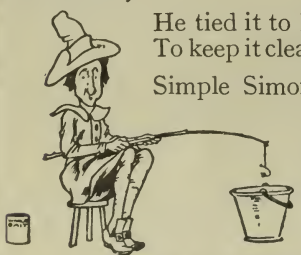
He went to catch a dicky bird,
And thought he would not fail,
Because he had a little salt
To put upon his tail.
He went to ride a spotted cow
That had a little calf;



She threw him down upon the ground,
Which made the people laugh.

Then Simple Simon went a-hunting
For to catch a hare;
He rode a goat about the street,
But could not find one there.
Simple Simon went to town
To buy a piece of meat;

He tied it to his horse's tail
To keep it clean and sweet.

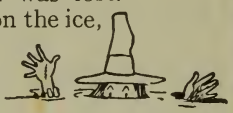


Simple Simon went a-fishing
For to catch a whale,
And all the water he had got
Was in his mother's pail.

He went to take a bird's nest—

'Twas built upon a bough;
A branch gave way, and Simon fell
Into a dirty slough.
He went to shoot a wild duck,
But the wild duck flew away;
Says Simon: "I can't hit him
Because he will not stay."

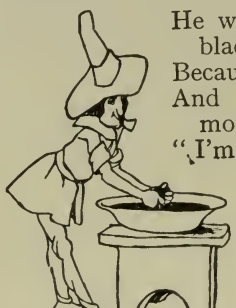
Once Simon made a great snowball,
And brought it in to roast;
He laid it down upon the fire,
And soon the ball was lost.
He went to slide upon the ice,
Before the ice would bear;



Then he plunged in above his knees,
Which made poor Simon stare.

Simple Simon went to look
If plums grew on a thistle;
He pricked his finger very much,
Which made poor Simon whistle.

He washed himself with blacking ball,
Because he had no soap;
And then said to his mother:
"I'm a beauty now, I hope."



He went for water in a sieve,
But soon it all ran through.
And now poor Simple Simon
Bids you all adieu.

WHAT THIS BOOK OF WONDER TELLS US

IN this part of the Book of Wonder the Wise Man has told us a very curious thing, — that nothing ever really comes to an end. It seems to us when we see the wood burn up and the water boil away that this cannot be true, and yet we learn that though the form and shape of everything may change, it can never really end, for the water becomes steam and the wood turns to ashes. There are so many things that puzzle us, and we wonder what it is that makes a rocket go up into the sky; why some waters petrify wood; why a lamp gives a better light with the chimney on than off; why the grass turns yellow when it is made into hay. All these troublesome questions the Wise Man answers for us and many more beside. He tells us what it is that makes the Aurora Borealis, why this wonderful light only appears in the northland, and why it is that people are so very silly as to believe in what the gypsy fortune-teller says.

MUST ALL THINGS END?

CONTINUED FROM 5170

ALL things do not end. We can think in a moment of a hundred things that end—such as, say, a piece of string, a stick, a fire that dies out, a river, or a race. These have one sort of ending that we can see with our eyes. We can think in a moment of a hundred things that end *for us*—such as, for example, a storm, which comes to an end as far as we are concerned, though we cannot say that the rain really ends, because the storm may have gone somewhere else. Or we may be watching a ship pass at sea, and the beautiful sight may come to an end because the ship passes from our view; but the vision is ended only for us, because, of course, others may watch the ship from beyond where we happen to be.

There are other things which we may allow to end or not, as the case may be, because we can control them. There are many cruel things in the world which men might bring to an end if they would, such as bull-fighting in Spain, or the cruel treatment of children by drunken parents in America. Men could stop these things if they would, as they can stop the ticking of a watch.

A clock has just been made which is expected to run for ten thousand years, so that we might think that that clock, at any rate, has no end. We may be sure, however, that the stuff of which the clock is made will crumble away in less than ten thousand years, and that brings us to what this question really means. We know that nothing can be utterly destroyed, and so we know, therefore, that nothing can be utterly ended. *But the form and shape of everything may end.* The stuff of which the clock is made may crumble; but though it is no more a clock, it is still stuff of another kind which we may call dust. And no doubt it might change, in millions and millions of years, through the action of natural forces that are always at work, into stuff of which another clock might be made. And so, of course, if a clock can end as a clock, the wall on which it hangs may end as a wall; the house which the wall supports may cease to be a house; the street in which the house stands may cease to be a street; the town through which the street runs may cease to be a town; and the very earth itself may cease to be *as we know it now.*

But, although man has not yet learned all that he has to learn, everything that man knows tells us in the plainest possible words that the earth can never be destroyed, however much its form may change. We speak of a thing wearing away; but nothing really wears away: its form changes, that is all.

So that what comes to an end is not a thing itself, but the form of a thing. The desire for excitement will not end

in Spain, but the day will come when it will be satisfied by something nobler than bull-fighting.

This book may end, in the form in which we hold it in our hands; but the thoughts this book has put into our minds, the feelings that have grown, perhaps, in our hearts as we have read it, will remain and influence our lives. Of one thing let us be sure for ever—that goodness never ends, that all this beautiful world, this wonderful life of ours, was not created by God to exist for a few years and then to die. The changes of Nature are sometimes more than we can understand, and the last change that we know, the sleep that we call death, is the strangest of all. But it is a sleep, and not an end.

WHY IS FOOD DEARER AT SOME TIMES THAN AT OTHERS?

Food is of many different kinds, and some foods are affected by the season of the year; so, of course, we should expect to find that certain fruits and vegetables are dearer at some periods than at others, for sometimes they are in season, and are so abundant that they can be sold for little more than the cost of picking and carrying them, and at other times they have to be forced under glass, or brought long distances from warmer regions.

But other kinds of food often vary in their price, and if we wanted to know all the reasons of this, we should really have to study the question of cost and price, which is a very big matter. We can understand that supposing, for instance, Australia starts sending larger numbers of rabbits prepared for eating, or New Zealand starts sending greater quantities of mutton than usual to any country, the price of meat will fall because there is a greater supply of it, and the people who provide these things at home will have to lower their prices.

IS THERE A REASON FOR EVERYTHING?

It is indeed the first of facts that there is a reason for everything—for the existence of everything, and for everything that ever happens in the world. This has long been seen to be true of certain things, like the movements of water, the facts of chemistry, and even of plants. But it was long supposed that things were different in the outside world from what they were in the inside world, and men did not believe that there were causes for all their thoughts and deeds, as well as for the falling of a raindrop. We are apt to be foolish in these matters, for we admit the cause of a thing when we see it; but when we do not see it we are apt to deny that a cause was there at all. The special word for causing is *causation*, and the first and greatest belief of science is that causation is universal, without any exception either in place or in time, either in the conduct of the weather or in the conduct of men. We are apt to take this for granted nowadays, as if it did not need saying, but it has taken all the thought and study of all past ages to prove, and the great majority of people, even to-day, do not realise that everything has a cause, and that consequences are endless. Every effect is the cause of further effects, and every cause or reason of things has its own cause or reason behind it. And so, if we think, we shall soon see that we must go back to the First Cause and All-Reason, the Cause of causes, whom men have come to call God.

HOW IS THE AREA OF A COUNTRY MEASURED?

The difficulty in measuring the area of a country depends entirely on the shape of it. There is never any difficulty in measuring the area of a thing so long as it is a rectangle in shape. *Rect* is simply the Latin form of right, and a rectangle is a thing the angles of which are right angles. The simplest kind of rectangle is, of course, a square; but two opposite sides of a figure may be very much longer than the other two, and yet we still have a rectangle, if all the four angles are still right angles. These pages are rectangles, though they are not squares.

Now, nothing can very well be easier than to measure the area of this page or of a country which, like this page, is rectangular. If the rectangle be a square, we measure the length of one side and multiply the figure representing the number of miles by itself, and we have the area of the square in square miles. In the case of this page or any rectangle that is not a square, we multiply the length of one side by the length of a side next to it, and, if we are measuring in inches, that gives us the area in square inches. Of course, most countries are not

rectangular, and the more irregular their shape, the more difficult will it be to measure their area. The principle at work is that which we have described, but its application will often require a great deal of intricate working out.

WHAT IS POSITIVISM?

Positivism is the name of a kind of new religion invented by a remarkable Frenchman called Auguste Comte, who was born in 1798, and died in 1857. Comte believed that the only kind of real knowledge we have is simply our knowledge of things around us. He believed that men's thoughts showed three stages. In the first, they believed in gods or in God; in the second, they believed in all sorts of abstract words; and then there was the third stage, which he called the positive stage, where men confined themselves to things about which they could have positive knowledge.

His religion included a great deal of regulation of human society, and very careful education of the young. It is often called the "religion of humanity," because Comte believed that men should worship humanity, the Great Being of which they are a part; and he invented a new calendar commemorating the names of great men of the past.

Positivism contains many beautiful and noble elements, but not in one case out of millions does it satisfy human nature; and so, though positivists still exist in various parts of the world, they are extremely few in number, and the expectations of Comte have been quite falsified. Comte was, however, a great and genuine student of society, and he discovered various important truths about mankind, and said so many wise and deep things that his name cannot be forgotten, even though the religion he invented is certainly a failure.

WHAT MAKES A ROCKET GO UP INTO THE SKY?

A rocket is made to go up into the sky by means of an explosion, just as a bullet is fired from a gun. All explosions are of the same kind; they are due to a certain amount of gas, which has been squeezed, forcing its way out so that it can occupy more space. If we allow it to force its way out only through a certain route, and if we put a bullet or a cork or a rocket in its way there, it will drive these things out, and may send them to a distance of miles.

Sometimes the gas that does the work already exists, and is first squeezed, and then allowed to spread itself out again. That is the case with a pop-gun or an air-gun. But when we fire an ordinary gun, or when we send a rocket up into the air, the gas which does the work is made on the spot.

In some way or other we cause the burning, or combustion, either of gunpowder or of something like it, within a very tiny space. The burning produces a quantity of gas which is all the more liable to expand because it is very hot, and which, so to speak, wishes to occupy many hundreds or thousands of times more space than the stuff from which it was made. Of course, we must be sure that it will only travel out in one direction, for otherwise the gun or rocket will burst.

CAN WE BREAK OUR HABITS?

Of course we can. But we must know what we mean when we speak of habits. In some ways breathing and eating might be called habits, and we know that we cannot break them, for they really depend upon the very structure and needs of our bodies. But real habits are all things learnt, and are not essential, and as they can be learnt they can be unlearnt; we can learn the new habit of *not* doing the thing we were in the habit of doing. Almost any ordinary habit can be learnt or unlearnt in about six weeks.

There are certain special habits, in some ways different from the others, which consist in using certain drugs, such as alcohol, tobacco, opium, and many others. These habits differ because they do not consist merely in the brain learning to do a thing over and over again. These drugs leave behind them in the body poisons which injure it and make us uncomfortable, and then the easiest way in which we can feel better is by taking more of the thing we began with. But these habits also can be completely broken. People always profess great astonishment when "the habits of a lifetime," as they say, are changed; but, as a matter of fact, this happens every day, and is true in some respect or other of almost everybody.

WHY CAN SOME WATERS PETRIFY WOOD?

The word petrify comes from a Greek word which means a rock, and that is also the meaning of the name Peter. If water petrifies wood, it must contain in itself something of the nature of stone or rock; and, in fact, stony material is actually laid down and left on the wood, which is therefore turned into something like stone or rock. The woody material itself may altogether disappear, but the tiny particles of stone are laid down just as the wood was. The water that can do this must be water containing various kinds of mineral matter dissolved in it in the form of salts. These salts may be of such a kind that when they are exposed to the air they change, and instead of remaining dissolved in water they become undissolved and turn solid, and are left behind.

The best example of such a salt is carbonate of lime, the common chalk that we all know so well. Chalk will not melt in water, but though carbonate of lime is insoluble in water, another salt, which is almost the same and is called bicarbonate of lime, melts in water quite readily. Now, if water with bicarbonate of lime dissolved in it runs over any surface exposed to the air, the bicarbonate is changed, because the extra quantity of carbonic acid from which it gets its name passes off into the air, and the salt left behind is carbonate of lime, or chalk, which is insoluble in water; and so this mineral matter is left behind, and will take any shape, according to the object upon which it is deposited.

WHY DOES A LAMP GIVE A BETTER LIGHT WITH THE CHIMNEY ON THAN OFF?

There are two good reasons for this, and at first they will sound, perhaps, as if they contradict each other. One reason is that the chimney protects the flame from draughts, and the other is that it makes such a good draught for the flame. We know, of course, how the flame of a match waxes and wanes, flickers, and then brightens up again, because of the draughts to which it is subjected. But if there are no draughts, it will burn more steadily. That is true of the candle-flame also; and that is one use of the lamp-chimney. But the most important use of the chimney is that it helps to carry away the burnt gases from the flame, which means that it makes a draught for fresh air to come in below and feed the flame. That is the great reason why the flame brightens up so much, and smokes so much less, when the chimney is put on. The reason why the flame smokes at first is that the oil is only being half burnt; the carbon in it is not being burnt at all, and forms the black specks that we see. But when the chimney is put on, the flame is much better fed with air, so that the burning goes on much more completely, and the carbon as well as the hydrogen in the oil is burnt up; most of the blacks disappear, and the flame burns brightly.

WHY DOES GRASS TURN YELLOW AFTER BEING MADE INTO HAY?

If there were no microbes in the world this would not happen; but nearly all the changes that happen in the bodies of living things after they die are due to microbes. This is as true of fish that turns bad as it is of grass that turns yellow when it is made into hay. Perhaps we are apt to forget that grass is part of the body of a living thing, but so it certainly is. It consists of those parts of certain plants which are called their leaves.

These leaves, like all other leaves, have the special duty of feeding on the carbonic acid of the air by the aid of sunlight, and for this purpose they contain a very wonderful chemical substance called *chlorophyll*, the colour of which is green. Like all other chemical compounds which are very complicated, chlorophyll is very easily broken up and changed into something else. On the other hand, most simple compounds, like water, are very stable.

When the leaves of grass die by being cut, the very first compound that suffers from the change is this delicate and unstable chlorophyll. It is broken up into compounds, some of which have a yellow colour. We see the same thing in the leaves of a tree in autumn, which the tree has deliberately killed by corking up the channels through which they got their food. The agents at work in all these cases are microbes, the sun, and the air, and water.

WHY HAS NOT SMOKE A FORCE LIKE STEAM?

The proper way to find out the answer to a question like this is first to discover why steam has force. When

we do this we shall probably find that the fact about steam to which it owes its force is not true of smoke. Now, steam is a word which we use in rather different senses; sometimes we use the word steam for the cloud that comes from a kettle, but every engineer knows that that kind of steam is not of much use in his engines—in fact, it has no more force than smoke has.

The steam that *does* work and has force is water-vapour confined in a small space and pressing in all directions outwards so as to get more room for itself. It desires to expand, and it is this force of expansion that makes it so useful. When it has got out in the air, and has taken as much room as it pleases, it has no more force. The force is not in the cloud of steam outside the kettle, but in the steam inside that raises the kettle-lid.

Smoke, on the other hand, has no force, because it has no tendency to expand. Smoke is, indeed, not a gas at all, but only a quantity of small pieces of solid matter which, not being very heavy, can be carried in a stream by the gases escaping from a chimney. These gases might have some force if they were confined in a small space, but once we understand where steam gets its force, we shall see that there is no reason why smoke should have any force.

CAN PEOPLE READ OUR THOUGHTS?

There are, of course, ways of guessing people's thoughts about which we all know something. Some people's thoughts are more easily guessed than others because their faces show more readily the kind of feelings that they are having; and if we can read their feelings, we can often guess the thoughts that arouse those feelings. People also vary much in their power of reading other people's faces, and so guessing their thoughts; and there is little doubt that, on the whole, women are a good deal cleverer at this than men. Of course, something depends on how well we are acquainted with the face we are looking at.

All this is quite different from real thought-reading, which would be the power of knowing what words were actually passing through a person's mind, just as if we were reading those words written upon his face. People often give exhibitions in public, and declare that they can read each other's thoughts; but in all such cases we know that, somehow or other, the person whose thoughts are supposed to be read communicates with the thought-reader. This may be done so quickly and cleverly as to be well worth seeing, especially as it is often quite impossible for us to guess how the trick is done; but it is not thought-reading. Some people believe that genuine thought-reading really exists, but certainly this has not yet been proved.

CAN PEOPLE TELL OUR FORTUNES?

There is a way in which people can tell our fortunes, and there is another way in which they cannot. No one can be certain of the future, but if we find that a man is strong, and brave, and true, and persevering, we know that certain things are very likely to be done by him. If we find that he eats and drinks too much, is lazy, and cowardly, and cruel, we can, in a sense, predict his fortune also. People who pretend to tell fortunes manage to get a certain amount of success because chance makes them right in a certain number of cases, and also because they study, as carefully as they can, the character of the people who come to them, and they judge by that. They know the tremendous truth that a man's character is his destiny; and so, if they can tell his character, they can tell his fortune.

But they cannot by any means tell a single one of the things for which foolish people go to them. They may sometimes appear to succeed, as when they tell a man who is going to drive a motor-car that at a certain corner he will be killed, because when he comes to that corner he remembers, and fears, and loses control of his car; and there are many cases on record where predictions have come true in this way, but that only proves how very silly indeed people are to go to fortune-tellers at all.

WHAT IS THE AURORA BOREALIS?

For many years past people have inquired as to the cause of the wonderful brilliance called the Northern Lights, or *aurora borealis*, sometimes seen in the north by people in some parts of our land, and still more by those who live farther north than we do. In seeking to find out what causes it, we must first begin

by studying the light of the aurora borealis, and we must do this by means of spectrum analysis. When that is done, we find that the light must have come from atoms of certain elements which form part of the air. These elements have only been known for a few years, and most of them were discovered by Sir William Ramsay. They mostly exist in the upper layers of air.

If we take a collection of these gases, and run some electricity through them, we find that they glow with certain beautiful colours which, indeed, make a very good imitation of the aurora borealis on a small scale. We are therefore inclined to believe that the aurora borealis must be due to electricity somehow exciting these gases as they exist in the upper layers of the air, and causing them to produce this glow.

WHERE DOES THE ELECTRICITY OF THE AURORA BOREALIS COME FROM?

We have lately learnt that all hot things give off tiny pieces of atoms, which are now called electrons, and which have powerful electrical properties. This is conspicuously true of the element carbon when it is made hot. Now, the sun is hot, and its outer part contains enormous quantities of carbon; so we may suppose that the aurora borealis is due to electrons from the sun striking the rare gases in the outer part of our atmosphere. But we cannot at all prove our theory unless we call in the help of certain other knowledge which we acquire in this book.

To begin with, how could the electrons get away from the sun? The sun's gravitation would tend to keep them, and if we are to believe that they are shot out from the sun, we must find something which will shoot them. Here our discovery of light pressure, or radiation pressure, comes to our aid. Without our knowledge of it we should have no right to say that electrons could leave the sun at all.

We cannot suppose that at all times electrons are being hurled in any quantity from the sun, and, indeed, we do not find that the aurora borealis is going on at all times. It is only sometimes, when things happen in the sun, and especially when there are many big sun-spots, that we find splendid auroras and also great disturbance of the magnetic needles on the earth. It has long been known that auroras and sun-spots go together. Now we understand the reason. It is when something or other happens in the sun which makes the sun blaze up and increases the light pressure that electrons can be thrown from the sun in all directions; and some of them, after travelling ninety-three millions of miles at the rate of twenty miles a second, reach the earth.

WHY DO THE NORTHERN LIGHTS APPEAR IN THE NORTH?

When the electrons from the sun approach the earth, it seems as if they are conducted along certain lines, instead of just striking it fair and square. We must remember that the earth is a magnet. Now, if we take an ordinary bar magnet and a lot of iron filings, we find that in the space around the magnet there is what is called a magnetic field, and filings or any such things coming within this field will behave in a certain way. They will run towards the two poles of the magnet, and will arrange themselves between those poles in certain regularly curved lines, which are called the lines of force of the magnet, or the magnetic field.

Now, our study of Nature teaches us nothing more certainly than that size, as such, is of no importance. A magnet is a magnet whether it be a bar of iron an inch long or whether it be the earth on which we live; and what is true of one magnet is true of another. Therefore the magnet called the earth must and does behave towards the electrons coming within its field of force just as a child's small magnet will affect the iron filings coming within its field of force.

So we find that when the electrons approach the earth, they are carried towards the Poles of the earth, and those which travel through the outer air towards the North Pole, or, rather, towards the North Magnetic Pole, cause what we call the Northern Lights.

Thus we have an explanation, long sought for, of one of the most beautiful facts in Nature, and the special interest of the explanation is not only that it is new, but that it depends upon putting together our newly-gained knowledge of light and electricity and magnetism. No wonder, when none of these things were known, that men could not explain the cause of the aurora borealis.

THE NEXT QUESTIONS ARE ON PAGE 5381

WHAT THIS STORY TELLS US

WE read in this story something of the mysterious powers of electricity and magnetism, two of the great secrets of Nature that man has yet to solve. But although man at present understands little of these things, he has learnt to use them in a thousand ways, of which there is no room to speak in these pages. Our business here is to learn the ways and the laws of Nature. There would be material for endless reading and writing if we were to follow up this Story of the Earth with an account of how men have applied the ways and laws of Nature. The electric bell, the various kinds of electric light, the telegraph, and the telephone, with and without wires, the machines which combine the properties of electricity and magnetism, turning motion into electricity or electricity into motion—all these are developments within the last two generations, or less, of what was learnt by the early workers in electricity, notably in our own country. Here we can study only the little that is known of the laws of these two forces.

NATURE'S GREAT MYSTERIES

THE MARVELS OF ELECTRICITY AND MAGNETISM

CONTINUED FROM 5178

THE Greek name for amber is *electron*, and it was found long ago that if a piece of amber is rubbed, it will attract light things to it; and this state of the electron, or amber, was called electricity. As it was produced by rubbing, it was sometimes called frictional electricity. It was found that many other things behaved in the same way when they were rubbed, and these curious and amusing facts were studied with some interest. Much later, it was discovered that if we have certain mixtures of chemicals arranged in what is called an electric cell, something will run along a wire, and this something is called an electric current.

This branch of electricity, also, has been very carefully studied, because the current that runs along the wire can be made to do things; it can be made to ring bells when required; part of the wire can be made to glow and give light; or the power of the current can be turned into motion and used to drive trams or trains.

The current need not necessarily be made by electric cells or batteries, but however it is made it can be turned to various purposes. We can send messages by means of such currents running along wires, or we can speak by means of them. Quite lately we have learnt that the wires are not necessary, that messages can be sent without them; and, later still, that it is possible to speak without them, so that we have wireless telephony as well as wireless telegraphy. There is another subject, called magnetism, which began in a simple way, just as electricity did. Certain kinds of iron will attract iron or steel; a piece of iron that does this may be called magnetic, or a magnet, and if a piece of iron is stroked by a magnet, it can be turned into a magnet too.

When we take a straight piece of iron and magnetise it, we may call it a magnetic needle, and if this be hung or balanced in some way so that it is free, we find that one end of it always turns more or less toward the North Pole of the earth, and the other end toward the South Pole.

Whatever this means, it is very convenient and useful, because here is something—the magnetic compass—which men may carry about with them anywhere, and which will always show them the direction of the north, even when the stars cannot be seen. Just as our knowledge of amber led us on to far greater things, so our knowledge of a simple horse-shoe magnet leads us on to wonderful facts. To begin with the case of a compass-needle,

the only explanation of its behaviour is that the earth itself is a huge magnet, and one end of the needle points to one Pole of the earth, and the other to the other, just as iron filings will behave in relation to the poles of a little magnet that we may hold in our hands. It may be asked: How is the earth like a horse-shoe magnet? But we must not be confused by the shape of such a magnet. It is really a bar of iron, one end of which is like the North Pole of the earth, and the other like the South Pole, and it is only bent into the horse-shoe shape for convenience.

We find that the magnetism of the earth does not quite run along the direction of the line joining the North and South Poles. The North Magnetic Pole of the earth is, therefore, not at the North Pole, though it is not very far distant from it; and the South Magnetic Pole, though near the South Pole, is not actually there. The compass-needle, therefore, does not point to the North Pole, but to the North Magnetic Pole, which is not due north.

How the Magnetism in the Sun Changes the Weather on the Earth

Now, though it is a great advance that magnetism should have grown from being a scientific curiosity to teaching us that the earth itself is a huge magnet, yet that is not all. Just as our knowledge of electricity grew until we learnt that it exists throughout the universe, so our knowledge of magnetism has grown until we learn that we have to study it in the sun as well as on the earth.

It has long been known that there is some connection between happenings in the sun and the state of the earth's weather. It has been known, also, that sun-spots have some connection with magnetic needles on the earth. Now, it has been discovered quite lately that sun-spots are due to magnetism at work in the sun. When the light coming from sun-spots is very carefully studied by spectrum analysis, of which we read on page 2716, it is found that there are certain features of it which teach us that it is under the influence of magnetism. This helps us to understand why sun-spots and the disturbance of the magnetic needles on the earth should have something to do with each other. Thus we begin to see how our ideas of magnetism are growing, and the very last discovery made about this subject is particularly interesting to us, because it depends upon what we have lately learnt about light and light pressure, and about the fact that the earth is a magnet. That is the discovery about the aurora borealis, of which we read on pages 3856 and 5251. Let us now see what other great things we are able to learn from the study of electricity and magnetism.

The Electric Current that is Made up of Waves in the Ether

We know that light consists of waves of the ether; we know also that similar waves exist, forming a great scale, so to speak, above and below that part of the light scale which we can see. We know, further, that all these waves are really a kind of electric current; that they all travel at the same speed and have the same laws. They travel in the ether. We must clearly understand that all electric currents travel in the ether. They are ether waves, and that is equally true whether they are running through the air without wires, or through the ordinary electric wires that we find so useful for directing these currents.

It is one of the penalties of the increase of knowledge that old names come to get new meanings, and then we are liable to be confused. This is true in the case of electricity. One meaning of it is currents or waves existing in the ether, and we cannot understand that too clearly. But the word has now come to have another meaning, depending upon entirely new discoveries, and we must not be confused by it. In this sense of the word, we may now talk quite properly of atoms of electricity, provided that we are not confused by the new meaning of atom and by the new meaning of electricity.

The Wonderful Discovery that All Things are Made of Electricity

The old meaning of atom, which is still employed, is applied to those minute particles well known to chemists, which make up, say, gold or carbon or oxygen. The new discovery is that these things are made up of something else, and the something else of which they are made up produces electricity, and has all the properties of electricity, and can therefore only be called electricity. Matter when thus studied melts away, therefore, into a kind of power.

The kinds of particles that make up atoms are called electrons, as we have already learnt. Their great feature is their immense electrical power; they carry electricity with them. All the electrons from all kinds of atoms are the same, and all the electrons carry the same quantity of electricity, no more and no less. All this is very important and wonderful, because it brings us down at last to something which is really the same everywhere, and out of which all the different kinds of matter are built. But something much more remarkable has yet to come.

THE ATOMS OF ELECTRICITY THAT MAKE THE SUN AND STARS AND ALL THINGS

We have said that these electrons carry a certain quantity of electricity. When we study their speed, their size, and their mass, and, indeed, all their properties, we make the staggering and magnificent discovery that, if we are to believe the evidence, all the properties of these electrons can be explained by the electricity which they carry. All their properties are electrical. We can account for everything by means of the electricity which we know is there. There is, therefore, no reason to suppose that anything else is there. These things are electricity—atoms of electricity, and nothing else; and the only conclusion to which we can come is that matter is made of electricity.

These atoms of electricity, as they are put together in certain ways, arranged into systems like a solar system or into star-clusters like the Pleiades, make the atoms and the molecules of the matter that we know so well; and there is no need to call in anything else. Electricity, therefore, began, as we saw, in the study of amber when it was rubbed, and thus it got its name; but it has now come to this, that matter itself is a simple kind of electricity, and nothing else.

THE TWO KINDS OF ELECTRICITY THAT ALWAYS ATTRACT EACH OTHER

It was long ago found that electricity showed itself sometimes in a way which led people to suppose that there were two opposite kinds of electricity, which they called positive and negative. In rather the same way, we find that anything which is magnetised is different at the two ends, or poles. Now, the two opposite kinds of electricity attract each other, but two things both charged with the same kind of electricity repel each other. In the same way, the north pole of a magnet attracts the south pole of another magnet; but similar magnetic poles repel each other, just like similar electricities. What we call the north pole of a compass-needle ought, therefore, to be called the north-seeking pole, for it must be opposite in kind to the North Magnetic Pole of the earth, toward which it turns.

These facts, long known about opposite kinds of electricity, have to be applied to our new discovery that matter is electrical. Similar electricities repel each other. The electrons that we have learnt about, which compose atoms and are shot out from atoms, are all charged with, or carry what, for the sake of a name, we call negative electricity. Almost certainly it would be truer to say that they *are* atoms of negative electricity. Then, according to the old law which has been known for hundreds of years, they should repel each other, and so they do.

THE MARVELS THAT MEN HAVE LEARNT FROM RUBBING A PIECE OF AMBER

But, if this is the case, how are we to explain the fact that particles of negative electricity can live together in friendship and order, so to speak, making up the atoms of matter? The answer must be that there is some positive electricity in the atom which attracts all the negative electrons and holds them together by its power. It makes us think of the atom rather as we think of the solar system, with the positive electricity compared to the sun, and the negative electricity compared to the particles of planets. That is as far as our knowledge goes at present, for we cannot say any more yet about the positive electricity of the atom.

It has been wonderful enough to start with the amusing behaviour of rubbed amber, and to end with a new theory of what matter really is—amber and air and stars and everything else. But even that does not tell us all the wonders of electricity, quite apart from its practical uses, which are not our concern here. For it is to electricity that we are now turning for the key to something else. If any student of the Story of the Earth were asked

what is the greatest problem still unsolved, what is the greatest discovery that any man could now make, he would certainly answer, the secret of gravitation. Here is something acting throughout all the universe in a regular way according to fixed laws.

All that has been done during the many years that have passed since a young man in his early twenties, called Isaac Newton, discovered the law of universal gravitation has been simply to prove that the law is as constant as he asserted. The law as he stated it is truer than he could possibly prove at the time. No kind of screen affects the action of gravitation; temperature does not affect it, chemical changes do not affect it; so far as we can learn, nothing whatever does. We have simply proved that Newton's law is true, but during all this time we have completely failed to discover the cause of gravitation. We know no more *how* it acts than Newton did. All we can say is that it must act through and in the ether, and that we have more proof of the existence of the ether than Newton had.

WHY THE EARTH'S PULL IS BELIEVED TO BE CAUSED BY ELECTRICITY

There is no end to the theories of gravitation, but the best of them breaks down. The very interesting thing is that the wisest and deepest of living students are coming to be convinced that gravitation, like everything else, has its secret in electricity. It must be an electrical force acting through the ether. Of course we have no proof of this yet, but the more men learn about electricity and the ether, the more inclined are they to take this view; and the study of electricity will be bigger and more important than ever if, as the wisest suppose, universal gravitation itself is one day proved to be an electrical fact.

We shall better understand why men think as they do if we consider for a moment what is believed about the ether. The ether, or the ether of space, as it is sometimes called, was first recognised because the existence of something had to be admitted in order to carry light. No student of Nature can believe that things act from one place to another without there being something in between. There can be no action at a distance without something to convey that action. If anything at all passes from the sun to the earth, there must certainly be something between the sun and the earth; and that something is the light-bearing ether.

HOW THE SUN AND THE EARTH ARE ABLE TO PULL EACH OTHER

Now, the other great fact of the relation between the sun and the earth is that they attract each other; and no student of Nature can believe that they attract each other from a distance without there being something between them through which the attraction acts. So even if an ether were not wanted to convey light, it would be wanted for gravitation to act through.

We have learnt that light is an electrical disturbance in the ether; we have learnt that there are many other possible electrical disturbances in the ether which are of the same order as light in all essentials, though they do not happen to affect our eyes. All the properties of the ether, then, as we understand them, are known to be electrical, except in this matter of gravitation.

But now let us pay particular attention. These electrical forces that we know of in the ether can push and can pull. We have learnt about radiation pressure, which teaches us that pushes can be exerted through the ether; but it is also certain that pulls can be exerted through the ether. When any light thing flies to the rubbed amber, attraction of some kind is happening through the ether. Electricity and magnetism are different parts of one and the same thing, and when a magnet attracts a steel needle, a pull is being exerted through the ether.

SHALL WE LIVE TO LEARN NATURE'S GREATEST SECRET?

We have proof, then, of two kinds of attraction—electrical attraction and magnetic attraction—which happen by means of the ether. There is yet a third kind of attraction, chemical attraction, where atoms of one kind of element fly to atoms of another and form a compound—perhaps with great violence, producing light and heat. Every chemist knows now that this chemical attraction, which may be so powerful, is really electrical. It happens through the ether.

If, then, we are compelled to believe, as we are, that the ether is the seat of electrical attractions which account for the behaviour of positive and negative

electricity, which account for magnetism, and which account for chemical attraction too, evidently it is only a step in thought to suppose that another kind of attraction, called gravitation, which must also act through the ether, is electrical also. We may dare to predict that many children who read these words will live to see Nature's greatest secret, the secret of gravitation, revealed along the lines here described.

THE TREMENDOUS POWER THAT WILL ONE DAY BE IN THE HANDS OF MAN

No one can say what new powers this will put, when it is at last discovered, into the hands of mankind; for to learn how gravitation acts will be sure to mean, sooner or later, learning how to control its action, and this opens up possibilities to which there is no limit at all. Every day we balance the action of gravitation by other forces, but to control its action is a different thing altogether, and would be by far the most important practical discovery that had ever been made.

We have now studied the Story of the Earth in all the greatest of its pages; we have seen how men had to begin by making the tremendous discovery that this flat, fixed earth, as it seemed, is really a round ball twisting on itself and flying through space. We have learnt how and why this ball flies, that it is one of many belonging to a family, and that that family is only one of a countless host of families in space.

Our study of the sun and of the stars has helped us to understand the earth and its place in the universe. We have learnt something of the crust of the earth, and we know that it bears records of the development of Life, and of more than Life, of Mind and Love also.

THE GREAT STORY THAT HAS BEEN UNFOLDED BEFORE US

We have had to study the stuff of which the crust of the earth is made, and which makes also the ocean of gases that covers the earth's crust everywhere, and at the bottom of which we live. We have learnt that the stuff of which the earth is made is the same as the stuff that makes the sun and stars. We have studied some of the countless changes that are always going on, especially through the great power of water, in the earth's crust, and also in the bodies of all the living things of which the earth is the cradle and the tomb. Lastly, we have studied the great forces which are at work throughout the universe, some of which act upon the earth, so that life is possible here. We have studied the laws of motion and of gravitation; we have studied sound and heat and light, and electricity and magnetism; and we have learnt, at any rate, the most important of the facts which the mind of man, toiling through many ages, has slowly begun to discover regarding them.

Greater than any one of these facts and conclusions are one or two supreme facts and conclusions which must govern and rule the minds of all thinking beings "to the last syllable of recorded time." The story which has been unfolded before us is that of a world which, with all its differences, is yet all One. We learn that we live in a Universe, a great Whole "whose body Nature is and God the soul." The laws of the little are the laws of the great. What is true at one time is true at another, nor is there any fact in all the universe which contradicts any other fact in any place or at any time, however distant.

THE CONSTANT TRUTH THAT NOTHING IS EVER LOST

We have learnt, too, that everything changes; but though everything changes, nothing is ever lost and nothing is without consequence. Though new facts are always happening, they depend upon the old ones, and nothing new comes into being from anywhere. Perhaps we may have learnt, indeed, the supreme lesson learnt by William Wordsworth, as by the greatest of men since thought began, and expressed by him in these simple words, with which we may conclude our Story of the Earth:

For I have learned
To look on Nature; not as in the hour
Of thoughtless youth; but hearing oftentimes
The still, sad music of humanity,
Not harsh nor grating, though of ample power
To chasten and subdue. And I have felt
A presence that disturbs me with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean, and the living air,
And the blue sky, and in the mind of man:
A motion and a spirit, that impels
All thinking things, all objects of all thought,
And rolls through all things.

THE WONDERFUL BATHS OF CARACALLA

The Romans, in the days of their wealth and luxury, spent much time at the public baths; and of all the magnificent buildings devoted to bathing, the baths of Caracalla, shown in this picture, were the most wonderful. Sixteen hundred people could bathe at one time, and the building measured nearly a mile round. The ruins are very impressive, and one writer has said that there is nothing in the world so grand as the remains of these baths.

The Capitol, the great national centre at Rome, as it appeared when the Romans ruled the world.

THE GRANDEUR THAT WAS ROME

CONTINUED FROM 5130

AUGUSTUS

In our journeys together through the countries of the Old World, we have often touched upon the prowess of Rome. We have seen her bring to an end the ancient stories of Greece, Persia, and Egypt, and then give shape, as it were, to the beginning of most of the countries of modern Europe. We remember the grand ruins still standing in various countries, which show how magnificent were the buildings, how skilful the engineering of the Romans ; and in all the countries where they settled, enough of their treasures have been dug up and collected for study, to bring us face to face with their owners. Besides this, many of their books have been handed down to us, and their language, their laws, and their customs are still influencing our world to-day.

For the beginnings of the story of the strong people who have thus linked the past with the present, we turn once more to the great steppe land which leads into the heart of Asia, whence poured out the migrations of Aryan peoples seeking new homes in the West. We read in the story of Greece, beginning on page 5121, how the tribes of the Hellenes swarmed into the peninsula that we now call Greece. Other tribes of near kindred to the Hellenes journeyed, probably by land across the passes of the snowy Alps, to the boot-shaped peninsula now known as Italy. By degrees various branches of the tribes, with their families and their herds of cattle, spread down the long peninsula. Some settled on the wooded heights of the Apennines, where the air blows so keenly and the gorges are so clear-cut by the dashing streams hurrying to the plains below. Other tribes preferred those plains where the fields were very fertile. The Umbrians found a resting-place round the head of the lovely Adriatic ; the Latins pushed on south of the yellow Tiber.

To the north of the Tiber there settled quite early along the west coast a vigorous, intelligent people of different race from the rest of the Italian tribes, called by us the Etruscans. Possibly these Etruscans were connected with the Hellenes, or Greeks, but nothing quite certain is yet known of their origin. Among the remains from Greece and Rome in the British Museum are many from Etruria, chiefly from the tombs that have such interesting wall-paintings. The red and black vases are thought

to be copied from those of Greece. We have not yet a key to the language of their inscriptions. When these Etruscans are first heard of, they were far in advance of their Italian neighbours, making roads and canals, and building immense walls and towers for defence.

We do not know for certain when the Latins began to give up living in small villages consisting of groups of huts, which was the way of living of all the Italian tribes in the earliest days. By degrees they came to fortify a hill-top by building a wall, which made a safe refuge for a meeting-place. Finally, independent cities grew up, and often there was warfare with neighbours.

About fourteen miles from the mouth of the Tiber is a group of seven hills, one of which was thus chosen as a place of refuge. It became a city-state and was named Rome.

It has been said that the whole history of the world depended on the position of this group of hills. They are close together, and are near the sea. They are situated in the middle of Italy, and in the middle of Europe as it was known in ancient times, and also near the middle of the Mediterranean Sea, once the world's great, busy highway.

How the beginning of Rome is lost in the mists of the past

We do not know when the foundation of Rome took place; some say 753 years before Christ, at the time when the "sons of Asshur" were so powerful in Assyria, and Egypt had already passed its greatest glory. The later Romans reckoned their years from the date of the founding of the city, as we do ours from the birth of Christ. In all countries it is very difficult to say when the old legends of beginnings end and the certain facts of history begin.

A race like the Romans, who rose to such immense power, naturally liked to feed their national pride by believing they were descended from gods and heroes; wonderful legends arose about their origin, and in process of time these were so grandly told by poets and historians that the world refuses even now to give up the attractive beliefs of long centuries. We are led very willingly back again to the siege of Troy, which scholars now place earlier than a thousand years before the birth of Christ, and watch its bitter ending for Priam and his family and friends. Æneas, whose father was Anchises, one of the Trojan heroes, and whose mother was the goddess of love and beauty, escaped from the dreadful slaughter, carrying his old father on his back.

After many thrilling adventures in the Mediterranean, including a visit to the Phœnician colony of Carthage, in which his goddess mother gave him much help, Æneas found his way to the west coast of Italy, where he married the daughter of the king of the country, named Latinus, and peaceably succeeded him as king of the Latins.

The strange story of Romulus, the founder of Rome, and the wolf

Many generations after, one of the daughters of the royal house had twin sons. Their father was the god of war. They grew up to strong manhood in spite of efforts to destroy them by casting them out upon the Tiber. A she-wolf nursed the boys till a shepherd found them and brought them up. They were named Romulus and Remus. Romulus succeeded in founding a colony and city on one of the group of seven hills near the mouth of the Tiber. This was the famous Palatine Hill, and this was the beginning of Rome.

The old stories give wonderful details of how the first Romans obtained their wives from the Sabine people living on another hill of the group, called later the Quirinal Hill, by running away with them at a joint festival. However this may be, the fact remains that one by one the seven hills were absorbed into one great walled city, made up of hills and valleys, green fields as well as dwelling-houses, with a fort on the Capitoline Hill. The Romans ever welcomed strangers to live within their safe enclosure, and traded with their neighbours round; they also fought continually with these neighbours, especially with the Etruscans, who, besides being foes, were the teachers of the Romans.

The walls of Rome, which enclosed a state as well as a city

Many and interesting are the glimpses given us of Rome in its cradle, in the story of the rule of the kings who succeeded Romulus, lasting about 250 years. We see the sober, hard-working peasants, developing by their patient toil qualities that made their race the best soldiers in the world. Marvellous

were the great works of the kings, such as the city walls, enclosing a state as well as a city, and the great sewers by which the marshes at the foot of the hills were drained, some of the arches being high enough for the loaded hay-carts to pass under. There was the fine Circus Maximus in one of the valleys, for games and races; and the picturesque stalls of the workers at various trades were set up round the market-place, or Forum, in another valley. Fine, too, were the temples rising up near the Forum and on the hill above, a faint shadow, as it were, of the glories that came afterwards.

But the people grew to hate the rule of the kings, and at last these were driven out, and a republic set up about 500 years before Christ. The chief officers of the republic were the consuls, and there was a council called the senate.

Lord Macaulay, in the "Lays of Ancient Rome," which we read on page 1403, gives vivid pictures of these old times when Rome, the youngest of the Latin states, was developing the character and strength by which she was able not only to rise to their headship, but to pass on to the conquest of the world.

How the Rule of the Fathers became the Rule of the Nobles

The simple family life, the hard-working peasants, the well-trained soldiers, the stern obedience to law, were some of the factors that led on to success. At first the state was made up of a number of families, each ruled by the fathers, or heads, called the *patres*. The king presided over the council formed by these patres, who became the *patricians*, or nobility. The new people who crowded into Rome for trade or shelter were called by the patres, who looked down on them, the *plebes*, or crowd. This was the beginning of a government by nobles, the patricians, over numbers of people below them in wealth and position, the plebeians.

These plebeians had no share in the government, no voice or vote in settling public affairs. The patricians became more and more unfair and unkind to the plebeians as time went on, till at last these would not endure it, and Rome, being torn in pieces at home, was unable to push conquests abroad for a long while. But the Roman people gained so much training in the long struggle, in the way of obedience, self-control, and perseverance, and in wisdom as to what was best for the general life of all, that they became thoroughly fitted in the course of years not only to conquer the world, but to govern it as well.

The Struggle of the Roman People for the Right to make their Laws

After a time the kingdom became a republic, but the difficulties of settling the new republic were great and prolonged. The plebeians slowly gained their rights, not by riots or bloodshed, but by obeying the laws, however much they disliked them, and by patiently striving for one step at a time. They got their own magistrates, who were called tribunes, and the privilege of owning land, and at last they helped to make the laws they had to obey. Two stories stand out prominently in the history of the small wars that went on from time to time with the tribes around during the struggles of the plebeians against the patricians.

One is that of Coriolanus, the brave man who, shut in alone in the enemy's city, yet managed to take it. Afterwards he had cause of complaint against his countrymen, and went over to the enemy, even leading their army against Rome. In vain did the senators and priests plead with him. It was only when his mother begged him to spare Rome that he gave in.

Then the story of Cincinnatus shows us how simple the old customs of Rome were, and how all citizens served the State. We see the curly-haired Cincinnatus at work ploughing on his farm, when messengers come to ask him to get the consul and his army out of a difficulty. Cincinnatus called for his cloak, and went at once, and succeeded in doing what was wanted. He then returned home to his farming.

The Fierce Gauls who drove the Romans in Terror from their City

All the time when there were little wars such as these in which Coriolanus and Cincinnatus shine out, Rome had always in her mind her old enemies, the Etruscans. These were wealthy traders. But the time came when their power began to decline. The Greeks won a great sea victory over them, and then came the Gauls, who were settled all over the northern parts of Italy. These attacked the Etruscans on land, and the Romans attacked them from the south.

In the year 309 before Christ, the tall and terrible Gauls, with their fair hair and flashing eyes, came down upon Rome itself, as we read on page 554, after defeating a Roman army of 40,000 men. We are told that "their harsh music and discordant clamours filled all places with a horrible din," and their long swords cut through the helmets of the Romans, making them flee in terror and panic.

No one thought of defending the walls of the city; the Capitol fortress on the Capitoline Hill alone held out, as we read in the story of the Sacred Geese, on page 554, and the white-bearded priests sat like statues in the Forum of the deserted city. The Gauls killed the priests, set fire to the city, demanded a heavy ransom, and departed. In this fire the city records perished, and with them all that would have given us actual facts about the thrilling story of the past.

How the Romans learnt to fight against elephants and won Italy

The Romans learnt much from their war with the Gauls, and steadily pursued their conquests over the rest of the states of the peninsula. After settling with the brave Samnites and the Etruscans, they had long wars with the Greek cities in the South. One of these was Tarentum. The people were one day sitting in an open-air theatre, like the one in Athens, listening to one of the splendid Greek plays; when they looked up, they saw the Roman ships sailing close to their harbour. So the war began, and they asked Pyrrhus of Greece to help them. It took the Romans five years to win.

As the war went on they learnt some useful lessons, understanding how to fight against elephants and how to improve their cavalry. When Pyrrhus had gone home, in the year 274 before Christ, after losing nearly all his troops, all the peninsula of Italy had passed to Rome. The splendid Greek cities of the South furnished beautiful works of art, and many articles of luxury hitherto almost unknown to the victors.

We see in the story of modern Italy, that begins on page 3011, how difficult the long, narrow country has always been to govern from one centre. The Romans had two plans by which to hold their conquests, and with these we are already familiar, because they were the same as were used in Britain. Colonies were founded, in which Roman citizens, who never forgot Rome, were sent to live and work, and teach others to do the same. Also fine roads were made to connect the colonies and the camps of the soldiers with the capital, along which roads troops could travel quickly and trade routes could be established.

A navy that was copied from a wreck, and sailors who rowed in sand

Soon after Pyrrhus had returned home, the tremendous wars between Rome and Carthage began. We read on page 5122, in the story of Greece, that Carthage was a colony of Phœnicia, and these wars are generally called the Punic, or Phœnician, wars. The western half of the north coast of Africa had been conquered by the Carthaginians, but the natives had not been well treated by them; so when they had to serve in the armies of their conquerors, they had none of the enthusiasm for their cause which the Roman soldiers had for theirs—they cared only for their pay.

The war began in Sicily, the lovely island midway between Rome and Carthage, and the Romans soon found that they must have a navy. With great courage and energy they set to work building ships, taking a stranded Carthaginian vessel as a model. While the sawing and hammering were going on, crews were in training, sitting on benches on the shore, practising rowing in the sand.

Great was the enthusiasm in Rome when the first naval hero returned after the first sea victory, which was gained at Mylæ, in the year 260 before Christ. But there were many ups and downs in the campaign. The great Roman fleet which was afterwards built defeated the enemy and carried to Africa an army which, under Regulus, had much success, till the splendid cavalry and the huge elephants of the Carthaginians turned the tide of war once more. We read the story of the bravery of Regulus elsewhere.

The delight of the people when elephants first went to Rome

In a later fight, 120 of the "huge, earth-shaking beasts" were taken and sent to Rome, to the great delight of the people, who had never seen elephants before. After twenty-three years of fighting, the first Punic war came to an end, peace being made by that most gallant general and wise man, Hamilcar, who was able to see when it was time

ENEMIES OF ROME IN VICTORY AND DEFEAT

Crossing the Alps amid the greatest difficulties, Hannibal, the famous Carthaginian general, defeated the Romans again and again, sweeping everything before him. After the battle of Cannæ, when he annihilated a Roman army, if his countrymen had sent him fresh supplies, he would probably have destroyed Rome for ever. But the reinforcements never came, and later Hannibal was recalled to Africa, where he was defeated by the Romans. In this picture we see Hannibal's army crossing the River Rhone, on its march into Italy.

The Goths, who had been driven from their old homes between the Black and the Baltic Seas by the Huns, entered the Roman Empire for protection about the year 375. They were incorporated in the empire, but later rebelled against the emperor, and, electing one of their officers named Alaric as king, entered Italy and three times besieged Rome. Twice the senate bribed them to retire, but the third time they took the city and, in the year 408, plundered it, committing many excesses. Here we see the Goths entering Rome.

to give in. Sicily was made a Roman province some years later, and then Sardinia and Corsica also became provinces.

Hamilcar had a son who was a great general, too. This was Hannibal. We are told that he worked day and night, and thought only of sleep when there remained nothing else that could be done.

HANNIBAL'S TERRIBLE MARCH ACROSS THE ALPS

After a useful campaign in Spain, where his father had been so successful in forming a province, he made one of the great marches of history. Leading his army of 50,000 foot soldiers and 10,000 horsemen, with numbers of elephants, he passed northward along the east coast of Spain, by the eastern "gate" of the Pyrenees, round the Gulf of Lions, across the swift Rhone, and then over the Alps themselves to the plains of North Italy. So rapid was his march that at every spot where the Romans had hoped to stop him they always arrived too late.

It is a pitiful thing to remember the lives that were sacrificed on the slippery, icy paths and the steep mountain-sides of the Alps. The cold was intense, and the people of the country rolled down great boulders on them, and attacked them from behind, just as the Swiss treated the Austrians many centuries later.

Before long all the valley of the Po was conquered by Hannibal, and he marched triumphantly down the peninsula, through Etruria, taking the Romans by surprise in the mist of the morning on Lake Trasimenus. A great attempt to get rid of Hannibal was made the next year at Cannæ, where all the best Roman soldiers were killed. In the British Museum, among many specimens of Roman armour of different periods, is a helmet found at Cannæ.

THE DESTRUCTION OF CARTHAGE AND THE CONQUEST OF GREECE

But the Romans, as usual, learnt much from defeat, and they patiently waited, until at last the great Scipio drove the Carthaginians out of Spain, and then beat them in Africa, so that they had to send for Hannibal to come home. In the year 202 before Christ, Scipio destroyed, at Zama, near Carthage, the army that had harassed Italy for sixteen years.

Rome was now the chief state in the West, and was supreme, owing to her ships, in the Mediterranean. The time had now come to turn her face eastwards. There had been a conflict with Macedonia during the second Punic war, and when that mighty struggle was finished, the Roman legion and the Macedonian phalanx—the light, easily-turned troops, and the solid body of bronze-clad warriors—met in Thessaly. The legions were successful, and passed on, after a time, to set foot in Asia, where they won a tremendous victory at Magnesia under the brother of the great Scipio, who had, after his successes in Africa, been given the name of Africanus. A terrible battle at Pydna, in Macedonia, settled the fate of the country in the year 168 before Christ.

In the same year Rome found an excuse to destroy Carthage, because it had not kept strictly to the hard terms of the peace made at the end of the second Punic war. The story—one of the saddest in history—is related by an eye-witness. The innocent people were totally destroyed, and the city was completely levelled with the ground.

THE CITY ON THE SEVEN HILLS THAT SWAYED BOTH EAST AND WEST

Among the Roman remains in the British Museum are shown some beautiful tessellated pavements from Carthage, once pressed by the feet of its prosperous citizens. One can easily imagine that he hears the patter of the children's light, dancing steps, as well as the slow, heavy tread of the aged, in the days when Carthage was great and gay. After the days of horror, the earth covered up these pavements in deep silence for centuries.

Spain was only conquered by most determined efforts. When at last success came to the Romans, the Mediterranean Sea had become a Roman lake, for Egypt alone still remained independent under the successors of Alexander. From Mount Taurus, in Asia Minor, to the Pillars of Hercules, the city on the seven hills now held sway.

But in the gaining of all this world-power the soul of the victors was sadly lost. No longer were they the simple, dignified people of old days. Riches increased so that luxury killed their finest qualities, and made them grasping and cruel. Slaves, ill-treated and mutinous, filled the place of the sturdy peasants whose bones now whitened the distant battlefields. So farming came

to be neglected as the land passed from the care of free men into large estates, owned by rich nobles living in towns. And these estates were often worked by slaves chained together in gangs.

Many of the best men in Rome saw the dangers that were falling on their country. One of these was Cato, who hated the new luxury and much of the Greek influence that had affected the religion of the country. Ever since the days when the Romans had warred with the Greek colonies in Italy, they had been learning to take an interest in Greek books, pictures, and statues, and some of the new things they learnt did not tend to keep up the old rough strength.

Another danger to the Roman state was the way in which the government had changed. Hardly had the old differences between the patricians and plebeians been settled than new difficulties arose. The chief offices of state came to be held almost entirely by a few rich families, and these made up the senate which governed Rome.

THE WORTHLESS MOB THAT CAME TO ROME TO SEE THE CRUEL GAMES

The senate, to get its own way, allowed the rich traders to be as oppressive as they pleased in gathering the taxes in the provinces, and the common people were kept quiet and contented by bribes of food and great entertainments in the circus. These entertainments led to terrible cruelties to men and beasts, as the taste of the mob became more and more lowered. It was their great delight to see lions and tigers hunted, also the feats of men called gladiators, who were trained to attack all kinds of animals and to fight each other to the death.

These games, and the gifts of free food, drew together in Rome a great mob of idle and worthless people, quite unfit to take any useful part in the great empire that was governed by their city.

There was much oppression, too, in Italy itself and in the distant provinces, and bribery and unfairness of all kinds prevailed everywhere. A noble pair of brothers called the Gracchi—we read the touching story of their proud mother, Cornelia, on page 2632—strove hard to reform some of the evils, especially with regard to the land, so that poor people might be able to get small farms again ; and in other ways they tried to take power out of the hands of the nobles, and improve the condition of the poor.

HOW BAD GOVERNMENT SHOOK THE VERY FOUNDATIONS OF ROME

But the misgovernment went on, and it became difficult to keep the enormous number of slaves in order. The army, too, so often flushed with success, became ever a more and more dangerous force in the state. For no longer were the Roman soldiers citizens like Cincinnatus, who fought only when their country needed them. When war became so constant, the army became a trade, which had a bad effect all round.

When Rome had conquered practically all the civilised peoples of the world, those who lived together in states and cities, and made and obeyed laws, she turned to the various uncivilised tribes who lived in a wild way on the outskirts of her empire, and who only united in the face of a great common danger.

Marius was a powerful and brilliant general, risen from the ranks, who defeated two great tribes—the barbarian Teutons and the Cimbri, who had entered Gaul west of the Alps. He succeeded in making himself chief consul for many years. Many troubles fell on Rome at this time—troubles in Italy, in the East, in Greece, and, worst of all, in Rome itself. We have the extraordinary spectacle of Rome being taken by part of her own army, under Sulla, a great enemy of Marius, so keen and bitter were the quarrels which led to ruinous civil wars.

In this first century before Christ, Rome was rich in great men. One was Cicero, who had wonderful power in speaking to men and in moving them. Many of his speeches have come down to us, and through them we learn much that is interesting about those troublous times.

THE TIME OF JULIUS CÆSAR, ONE OF THE WORLD'S GREATEST MEN

Another great man was Pompey, who cleared the Mediterranean of pirates, settled difficulties in Asia, and had much power in Rome itself. Another was Julius Cæsar, one of the greatest men in all history, great as a general, great as a statesman, and great as a writer. In the year 60 before Christ he became consul with Pompey and Crassus, and

succeeded in getting the governorship of Gaul. In his "Commentaries on the Gallic War" he has left us an account of his expeditions and of the hard work by which he conquered all the land north of the Pyrenees and west of the Rhine. He gives an account of the south of our own island, which he visited twice. Gaul he bound firmly to Rome, by treating the conquered people kindly after they were thoroughly beaten, by introducing Roman ideas and customs, by making roads, and by starting buildings.

"VENI, VIDI, VICI," CÆSAR'S FAMOUS LETTER IN THREE WORDS

When at last he felt he could leave his province safely, and had also made himself known as a successful general and the "beloved of his soldiers," he was ready to carry out the plans he had made to change the government of Rome.

Crassus had been killed in battle against the Parthians, and then Pompey and Cæsar became rivals for the chief power. When the senate refused to do as Cæsar wished, he came from Gaul with his army and crossed the little river, the Rubicon, into Italy, to fight for his cause. Pompey and the senate and the consuls all sailed away to Greece, and in sixty days Cæsar had gained all Italy.

A great battle was fought between the two generals at Pharsalia, in Greece, the next year, and Cæsar won.

For the next few years he had no rest, going from Egypt to Asia, whence he wrote his famous letter in three words, "veni, vidi, vici"—meaning "I came, I saw, I conquered"—from Asia to Rome, then to Africa, thence to Spain. In the year 45 before Christ he returned to Rome, master of the Roman world.

HOW THE MASTER OF THE WORLD WAS STRUCK DOWN BY HIS FRIENDS

Cæsar was assassinated in the senate house the next year by his old friends, who thought it their duty to prevent Rome from coming under the rule of one single man. In Shakespeare's play of "Julius Cæsar" is the thrilling account of the tragedy, and the speech of Mark Antony over the body of Cæsar. A part of this noble speech is given on page 2917

Civil war followed, during which time Egypt became a Roman province, as we read in the story of that country beginning on page 4779 Cæsar's clear-cut, determined face, which shows him to be a great ruler of men, is the first in the gallery of splendid Roman portrait busts in the British Museum. Next to him we see Augustus. After thirteen years of confusion, this adopted son of Cæsar slowly and carefully gathered all power into his own capable hands till the Romans found that they could not do without him.

When he called himself imperator, whence comes our word emperor, it meant that he was the holder of a military command from the people. When he became censor, he could influence appointments to the senate; as *princeps*, or prince of the senate, he could always speak first at its meetings. Then he became chief magistrate of Rome, and head of the national religion.

Many wise changes were introduced which brought about law and order, not only in Rome, but in Italy and the distant provinces. And so, without trouble, the ancient republic passed away, and the rule by one man was set up.

AUGUSTUS, WHO RULED THE WORLD WHEN JESUS WAS BORN

In the time of Augustus there were so many great writers in Rome—such as Virgil, who wrote the splendid poem about Æneas and the founding of the city; Livy, the historian; and Horace, the interesting poet—that to this day a period full of great writers is called an Augustan Age.

But the great epoch-making event that took place in the reign of Augustus was the birth of Jesus in the far-distant province of Syria. It was Augustus who, all unknowing, determined the place of the birth of Jesus, for the emperor ordered a census, or counting of the people, which Mary was on her way to attend when Jesus was born in Bethlehem.

How astonished the powerful emperor and all the great men of his time would have been if they had known that it was not their fame or achievements that would so greatly influence the world, but rather the life and words of the humbly-born Babe, who grew up to work in a carpenter's shop, and who, later, had not where to lay His head.

Augustus was the first of a line of emperors who ruled the world for 300 years. We can read their stories and look at their faces in the part of this book beginning on page 527. In the

THE GIGANTIC BUILDINGS OF ROME

The Pantheon, shown here as it appeared in the days of Rome's grandeur, is the best preserved of all her wonderful buildings that have lasted to the present day. Built as a temple to all the gods, 27 years before the birth of Christ, it has been for about thirteen centuries a Christian church, and is still one of the most perfect buildings in the world from an artistic standpoint. Raphael and other great artists lie buried in the Pantheon.

For 400 years the mighty Coliseum was the scene of the cruellest spectacles the world has ever witnessed. Here 87,000 spectators watched the death-struggles of gladiators, the fierce fighting of hundreds of animals, and the martyrdom of Christians. Sometimes the arena was flooded and great mimic sea-fights took place. During the Middle Ages much of the masonry was removed, and now the Coliseum is the most impressive of ruins.

British Museum are many deeply interesting memorials of those grand and sometimes bad days—armour, weapons, sculpture, pens—which were called *styli*—inkpots, shoes, keys—for slaves could seldom be trusted—purses and money—all of which make a historical picture-gallery of great interest.

THE CITY THAT WAS BURIED IN A STORM OF FIRE

All these things, and many more, cause us to feel at home with the old Romans. Some of the most wonderful of these things come from the city of Pompeii,. overwhelmed by lava and ashes from Vesuvius in the year 79. So fresh are the colours of the paintings on its walls, so modern their subjects, and so like ours are the cooking implements, that we can scarcely realise how long ago the awful and sudden burial took place. This sealing up by Mother Nature of the city of Pompeii has kept intact for us the very cart-tracks in its streets and the scribbled advertisements on its walls, as well as such matters as the arrangement of houses, baths, and theatres.

In Rome itself, the temples to the gods and the palaces for the emperors were very numerous. Many of the Roman emperors did something toward beautifying the old city on the seven hills. There is the arch of Titus, which we see on page 5012, showing his victory over the Jews and the spoils of the Temple being carried round Rome in triumph. He and his fine father, Vespasian, built splendid baths and the Coliseum which we see on page 627.

In this vast amphitheatre thousands of spectators sat watching the games and shows that the emperors provided to keep the mob in good temper. Its ruins are among the most impressive and astonishing in the world.

THE GOOD EMPERORS WHO RULED ROME FOR A HUNDRED YEARS

Trajan built the magnificent Forum, with galleries and walls round its open square, and here he set up the column of which we have a cast in the Victoria and Albert Museum in London. This gives the chiselled picture of Trajan's victories over the Dacians—the barbarians across the Danube.

For a hundred years after Trajan, good emperors ruled in Rome, and there was a time of peace and prosperity.

The work of fine artists makes the grandeur and brilliance of imperial Rome still live for us. For we can watch them feasting amid showers of roses, or listening to the old Greek stories in gardens by the blue sea, or joining in magnificent processions. But while the careless luxury was going on, ever round the frontiers of the empire the rough, strong peoples were encroaching and gaining little by little. In the middle of the third century there was defeat on every side. The Goths and the Vandals were terrible foes, and the empire began to break up.

We know how Constantine favoured the Christians, and how he founded a new capital in the East about the year 330, and how, in the next century, the empire was divided into two, with Constantinople for the capital of the eastern half, and Rome for that of the western.

There was a terrible time when the Goths poured down the peninsula and took Rome itself, in 410. So much damage did these rough people do that to this day we speak of anyone who is careless of beautiful things as a Goth.

HOW THE SPIRIT OF ROME LINGERED ON IN THE WORLD

But the spirit of Rome lingered on. In the West the barbarian conquerors settled down in Spain, Gaul, and Italy, and learnt the language and customs and manners of the people of the old Roman provinces, and to the Christian bishops of Rome was given in these countries a headship which still exists.

In the East a long struggle against Huns and Persians, Arabs and Turks lasted on, as we know, till the taking of Constantinople in 1453 made that city the capital of the Turkish Empire.

What a pageant the long story presents to us! Always the tramp of soldiers from first to last, and for centuries we hear the steady sweep of the oars as the prows, with victory aboard, point from end to end of the Great Sea. As we dream again of the early legends, of the grand buildings, the wild revelry, the work of all kinds, the yells of the storming barbarians, we feel that the sickly perfumes of the extravagant baths and feasts are overpowered by the fine smell of freshly-turned earth under the freeman's plough. For we forget the evil, and remember only that figures of heroes are passing by.

CONTINUED ON PAGE 5331

This is one of the prettiest varieties of the clematis, which is cultivated as a climber over walls and porches.

THE FLOWERS OF THE GARDEN

CONTINUED FROM 5193

THERE is no such thing in wild Nature as a double rose. All the wild roses have only five petals, a great number of stamens, and several pistils. The gardener has so coaxed and petted the rose that he has induced it to turn nearly all its stamens into petals, and he has changed its colour so often that now we may have roses of almost any tint, from yellow and white and pink to the darkest of purple crimsons. He has been trying for long years to grow a blue rose, but, so far, has always failed.

To-day there are the names of more than a thousand garden varieties of roses in the catalogues of the nurserymen. Owing to the fact mentioned, that the "doubling" of the rose has meant the loss of most, or all, of its stamens, these flowers, lovely as we may consider them, are, after all, imperfect flowers. The pistils are mostly there, but if they produce seeds it is, in most cases, through pollen brought by the bees from wild roses in the fields; so that the seeds grow into plants with flowers more or less like the field rose.

So when a flower appears that is better than others of that particular kind of rose, the gardener has to cut off the shoot that produced it, and to get it to take root. Then, when it has grown into a little bush, he cuts out a number of the shoot-buds from the stems, and fixes them under the skin of a wild rose, and when the wound has healed and the bud has grown into a shoot, he cuts off all the other shoots and buds of the wild rose, and allows only the new parts to grow. In this way he makes a number of specimens of his new rose out of the one little cutting he induced to root. Some of the shoots he may cause to grow on wild-rose stems — or "stocks," as he calls them — by grafting; and by this means all the garden roses have to be increased.

Perhaps the most popular of all garden flowers just now is the sweet pea. It grows wild in Sicily, and was first grown in our gardens a little more than two hundred years ago. There is no need to describe the flower, except to point out that its structure is the same as that of the narrow-leaved everlasting pea, and of the broad-leaved everlasting pea of the garden. These, however, are perennials, and bear their flowers in clusters, or racemes, while the sweet pea is an annual, and bears only two or three blossoms on each flower-stalk.

The carnation, in its wild state, is,

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of course, always single, and it is a native of the countries around the Mediterranean. It is believed to have been taken to England as far back as the middle of the thirteenth century. Owing to its strong, clovelike scent it used to be called the clove, or clove-pink. As a wild flower its colour is always lilac; but by careful selection and crossing between the best of the varieties that appeared in gardens we now have all sorts of tints.

Garden pinks of all kinds are closely related to the carnation; so is the old-fashioned sweet-william, which has broader and greener leaves, and the brilliant Chinese pink so frequently grown as a garden annual. The pink and the sweet-william came from Europe long, long ago, and the Chinese, or Indian pink was brought here from China just about two hundred years ago.

THE GERANIUMS

Then there are the geraniums used for bedding in the summer months, but which are too tender to stand our winter climate out of doors. Their proper name is pelargoniums, but the gardener persists in calling them geraniums. We have a number of wild geraniums in this country, but no pelargoniums. The latter were introduced from South Africa about two hundred years ago, and have been so improved by crossing that they have little resemblance to the original South African plants. They may be ranked in three distinct classes — the show pelargoniums of our greenhouses, with large, richly coloured flowers; the zonal, or bedding pelargoniums; and the ivy-leaved pelargoniums that look so well trailing over the sides of window-boxes.

THE STOCKS

Brompton and ten-week stocks are cultivated forms of plants that grow wild in the south of Europe, and they have grown in our gardens for a hundred and fifty years. They are annuals. The wallflower belongs to the same family — the cross-bearers — and is also a European plant; but it has been known in English gardens for over three hundred years. Arabis, that produces masses of pure white flowers in early spring on rockeries and in border edgings, is another member of the same family. It was taken to England from the Caucasus little more than a century ago.

THE BUTTERCUP FAMILY

The buttercup family has given us many garden flowers, among them all the beautiful forms of clematis that climb over our walls and porches, covering them with white or purple flowers. One of the best of the white-flowered kinds is the mountain clematis from India. The big-flowered purple and blue kinds are cultivated forms of a Japanese species. There are no petals in any clematis, the showiness of the flower being due to the four sepals. The noble larkspurs also belong to this family.

Often in cottage gardens we shall find a larkspur with leaves divided into hair-like portions, and with a spike of blue, red, or white flowers. This is also a cornfield weed in the east of England. But in larger gardens we shall frequently see a larkspur that towers up to six feet or more, and ends in a long, thick column of brilliant blue flowers. Its parents grew wild in North America a hundred and fifty years ago.

The Christmas rose is another of the buttercup family, nearly related to the wild hellebores. It is no rose at all. Its bold, white flowers appear in winter, and so are greatly esteemed. All the brightly coloured ranunculi are true buttercups with larger flowers than any of our wild yellow kinds; they came from Turkey and Persia, where they had been cultivated long before. The garden anemones, too, are relations.

There are poppy anemones also, and Japanese anemones, the latter tall-growing, with handsome leaves and large white or pink flowers. Poppy anemones are real old-fashioned garden flowers, for we have grown them for three hundred years; but the scarlet anemone and the Japanese anemone are quite modern introductions.

Columbines, monk's-hood, and peony all belong to the Buttercup family, although they are so unlike in general form. The columbines come near to the larkspurs. Up to the middle of last century the garden columbines were mostly

forms of the European kind, but in later years, owing to the coming of the beautiful, long-spurred, yellow columbine from California in 1873, a good deal of crossing has taken place. The peony, though a native of South Europe, was grown in English gardens at least three hundred and fifty years ago. These peonies were the large-flowered, dark crimson kind, and a smaller white-flowered one from Siberia; but towards the end of the eighteenth century the shrubby tree-peony was brought from China and Japan, and became popular on account of its more delicate tints.

THE VIOLETS

Garden violets are improved forms of the wild sweet violet, and the pansies and bedding violas have been produced from the little wild pansy, or heartsease. Many of the garden violets are double; but the florists do not appear to have tried to get double pansies — they seem to have tried to keep the flower as flat as possible.

THE FUCHSIA

Except as a summer bedding plant, the fuchsia is only seen in gardens of the extreme south and west of our country. In California we shall find it is one of the common garden bushes, and it often becomes a small tree. It is a South American plant, that was unknown in this country until near the end of the eighteenth century.

THE POLYANTHUS

The polyanthus is to-day rather a forgotten and neglected flower, but we shall still find it treasured in old-fashioned gardens and gardens of country cottages. It is believed to have had its origin in a crossing of pollen between the primrose and the cowslip, the result being the large flowers of the primrose on the tall flower-stalk of the cowslip, with a greater variety of richer tints than either of its original parents possessed. The auricula is another kind of primrose that was formerly a great favourite of gardeners. All the many varieties of rich colouring have been produced from the yellow-flowered auricula that grows wild in the Swiss Alps.

Among the wild flowers that have been taken into the garden without it being thought necessary to improve them is the graceful and dainty London pride.

THE SEDUMS

Several wild sedums, or stonecrops, of Europe have been admitted into the garden; not only the yellow and white stonecrops, but also the taller crimson-flowered orpine. A beautiful sedum with bright crimson flowers is the trailing stonecrop from the Caucasus region.

THE THISTLES

We have even taken into the garden several thistles, among them the handsome, blue-flowered globe thistle, from the south of Europe, which has been with us for more than three hundred years. The cotton thistle, which is a tall, branching plant, with huge but handsome spiny leaves, covered with white, cotton-like hairs, is wild in some parts of the country. Another fine thistle is called the holy thistle, or milk thistle. Its large leaves are marked with white along the midrib.

SOLOMON'S SEAL

Solomon's seal is a real wild flower; but it is much more frequently seen in our woods than in the garden. It is one of the lily family, though its habit is so very different from most of the lilies. Its tall, arching stem, set with a row of leaves on each side, looks more like the frond of some palm. The greenish-white, narrow, bell-like flowers present a very singular appearance.

THE LILIES

The lily family figures largely in our gardens, and of the lilies proper we have introduced several. There is, perhaps, none of them so fine as the hardy madonna lily, or white lily. It is wild in the south of Europe. There is also the tiger lily, with its dark-spotted, orange-red flowers, that came from China a hundred years ago, from which country and Japan we have received several other lilies.

The strongly scented Japanese lily, with the golden stripe down the middle of the large white petals, is, perhaps, the favourite, though it is not hardy, and can only be turned into the garden in summer, being usually planted in tubs and grown in the greenhouse, until

the flower-buds have formed. This lily was unknown to us fifty years ago.

Very similar, except for the golden stripe, is the showy lily, a smaller but more hardy kind that came from Japan nearly eighty years ago. Then there is the giant lily, that has large, heart-shaped leaves, and a stem ten feet long, that ends in a cluster of drooping white, trumpet-shaped flowers. The star of Bethlehem is another plant of the lily tribe, which, though a native of Europe, has become naturalised in some woods. It is one of the prettiest of our smaller bulbous plants, its numerous grass-like leaves spreading around a stem crowded with white, star-like flowers.

Among other lilies we must not forget the tulip, of which we have a great number of varieties of diverse forms and colours. Most of them have descended from three wild tulips found in South Europe, Siberia, and Asia Minor. The fragrant white day lily is from Japan, as well as its blue relatives. The sweet-flowered lily of the valley is a wild plant of the woods which is much more frequently seen in gardens than outside of them. The stately red-hot poker, which makes so fine a display in parks and gardens at the end of summer, is also a lily, coming from South Africa.

THE HYACINTHS

The garden flowers that arise from bulbs, like these lilies, might well take up an article to themselves — they are so many. Many of them are known under the general head of Dutch bulbs. Among these are the wonderful trusses of sweetly perfumed hyacinth-bells that spring from the onion-like bulb in all sorts of charming tints. The original stock from which all these varieties have been produced is the oriental hyacinth, which is wild in Syria.

The grape hyacinth belongs to another section of the lily family, and grows wild in Europe and the Orient. Instead of the bell-shaped flowers of *the* hyacinth, these are globular, and, as they are dark blue in colour, resemble little grapes; so the plant has been called grape hyacinth. The hyacinth, or bluebell of English woods, belongs to another branch of the family — the squills. The kind more generally seen in borders is the early-flowering, bright blue Siberian squill, often planted with a somewhat similar flower called the glory of the snow, which came to us from the island of Crete about thirty years ago.

THE AMARYLLIS FAMILY

Another group of bulbous plants comes near to the lilies, but belongs to the amaryllis family. Well-known garden examples of this family include the snowdrop, narcissus, and belladonna lily. The snowdrop is commonly grown in gardens, though of late years the larger Elwes snowdrop often takes its place.

This comes from Asia Minor, and has only been known to us since 1875. Of narcissi we have not only the wild daffodil and many cultivated improvements of it, but the jonquil, the poet's narcissus, or pheasant's eye, the polyanthus narcissus, and a host of others.

THE IRIS FAMILY

Then there are so-called bulbous plants whose rootstocks are solid corms, instead of being made up of fleshy scales as the real bulbs are. These belong to the flag, or iris, family, and include the crocus and gladiolus. The flags are a large group, which includes the English and Spanish irises, springing from underground corms and having narrow rush-like leaves, and the German irises, which have very thick rootstocks that creep along the surface, with broad, sword-shaped leaves. All are beautiful, and many of them have flowers as strikingly coloured as the tropical orchids. Every one remembers how brilliant the marshes are in June, when the blue flags are in bloom. When transplanted to a damp place in the garden, they will bloom quite as effectively. The streams of England reflect the golden glow of their yellow flags, which are often cultivated, while Japan sends us enormous flowers of the most peculiar colours. Our garden crocuses — white, purple, blue, and yellow — are cultivated forms of species that are found growing wild in the south of Europe and Asia, while the gladioli cultivated in America come chiefly from South America.

THE NEXT STORY OF NATURE IS ON PAGE 5323

THE RED ROSE

The rose is the flower of flowers. No other blossom is so delightful to the eye or so fragrant as a really fine rose, and of all varieties those of a deep, rich red, like the one shown here, are the most beautiful.

THE MAIDEN'S BLUSH ROSE

After the rich red varieties, the most delightful of roses are those of the delicate shade of pink known as maiden's blush. There are, of course, many kinds of roses with this colour, and the one in this picture is a good example.

THE RAMBLER ROSE

The rose is the typical English flower, and it never appears more English than when it is seen trailing over the lattice-work portico of some picturesque cottage. A variety of the rambler rose is best for this purpose.

THE TEA ROSE

The tea roses, of which this is an example, are now very much in favour with rose-growers on account of their extreme grace and delicacy. The name is given because of a supposed resemblance to the fragrance of tea.

THE SWEET PEA

The sweet pea, which is so popular in our gardens on account of its fragrance and the variety of its colours, grows wild in Sicily. It is very useful to hide an unsightly spot, and forms a good screen for a fence.

THE CARNATION

The carnation has been a favourite garden flower for about 600 years, and is now grown in a great variety of colours and markings. Owing to its clove-like odour, the crimson carnation is often called the clove.

THE EVERLASTING PEA

This is a very hardy plant and will thrive almost anywhere, even in stony courtyards. Unlike the sweet pea, whose flowers grow in twos or threes on each flower-stalk, the blossoms of this pea come in clusters.

THE WHITE SWEET PEA

The sweet pea is grown in almost every variety of colour, from the deeper shades to the most delicate tints, but perhaps none is so attractive as the white pea, on account of its dainty and beautiful appearance.

THE PINK

The pink is a near relative of the carnation, and is much sought after for the garden, as it is very hardy and at the same time pleasing. Another close relation is the sweet-william. The pink is a very old-fashioned garden flower.

THE IVY-LEAVED GERANIUM

A glance at the leaves in this picture will explain the reason for the name of this geranium. In no other family of plants has the gardener's art produced a greater variety of form and colour in both leaves and flowers.

THE SCARLET GERANIUM

No other plant produces flowers of such a vivid scarlet as the geranium, and it is difficult, in all the vegetable kingdom, to find another object so handsome and striking as a cluster of blossoms of the double scarlet geranium.

THE BROMPTON STOCK

The numerous varieties of stocks that are now to be obtained have all been grown from one or two wild kinds. The flower shown in the picture is the Brompton stock, and it can be had in purple, scarlet, and white.

THE TEN-WEEK STOCK

Stocks are found in most gardens, for they are very attractive on account of their varied colours and their masses of bloom. In the west of England the ten-week stock is called the jiloffer, a corruption of gillyflower.

THE CLEMATIS

Among climbing plants there is none more beautiful than the clematis, or virgin's bower, as it is called. The various kinds of clematis vary in size, some growing about a foot high and others having stems fifty feet long.

THE BLUE CLEMATIS

The large-flowered blue clematis, of which there are several kinds, came originally from Japan. It needs a richer soil than the white-flowered varieties, but thrives best in a chalky soil. Clematis looks well upon walls.

THE MONK'S-HOOD

Monk's-hoods should never be planted where their roots could be dug up and mistaken for the various kinds of eatable roots, for they are very poisonous. The name of the plant refers to the shape of the flowers.

THE DOUBLE FUCHSIA

The fuchsia is sometimes called the lady's eardrop, a reference to the drooping earrings that ladies used to wear. The flower in the picture is a double fuchsia, a beautiful development from the original plant.

THE SINGLE FUCHSIA

This is a single fuchsia, and the plant makes an attractive bush in the genial climate of California, where it is very commonly found in the gardens, a mass of blossom. The fuchsia is named after the German botanist Fuchs.

THE POLYANTHUS

Polyanthus means many-flowered, and the plant, which is probably descended from the primrose and the cowslip, has its flowers growing in clusters on a leafless stem. The polyanthus loves moisture and shade.

THE SEDUM

There are many kinds of sedum, or stonecrop, that are well worth a place in our gardens. They will grow in almost any soil, and are very easily cultivated. In some districts the sedum is known as midsummer men.

THE GLOBE THISTLE

Some of the wild thistles are very striking plants, but the most ornamental of the whole thistle family is the blue-flowered globe thistle, shown here. It comes from South Russia, and its large, round flower-heads are blue.

THE LILY

All the lilies are very stately and graceful. Many of them are much alike, but particular varieties are adapted to particular soils and situations. Some are admirably suited for the rock garden, and others for the shrubbery.

THE GOLDEN-RAYED LILY

This is one of the handsome lilies that have come to us from the East. There used to be a superstition that the health of the household in whose garden this lily grew corresponded with the condition of the lily.

THE MADONNA LILY

The madonna is one of the best-known lilies, and at the same time one of the loveliest. It will thrive well for years if left undisturbed in good soil. It was dedicated to the Virgin Mary, and is also called the lady lily.

THE TIGER LILY

This lily is very stately, and is a great ornament in any garden. It is easily cultivated, and needs a deep, sandy loam with an open but sheltered position. It was brought to England from China about a century ago.

THE RED-HOT POKER

This plant, the kniphofia, is called also the flame flower and torch lily. It is a native of Africa, and is an exceedingly striking plant. Our severe winter weather often kills the plant, or it would be grown more than it is.

THE GLADIOLUS

The gladiolus, or sword lily, is the most beautiful of late garden flowers, and should be grown by all who want attractive gardens in the autumn, for it is very easy to cultivate. It looks well with red-hot pokers

THE VIOLA

This is one of the many pretty little flowers that have been developed by cultivation from the heartsease, or wild pansy, of the field. Violas are well worth growing in the flower-beds of our gardens.

THE MALOPE

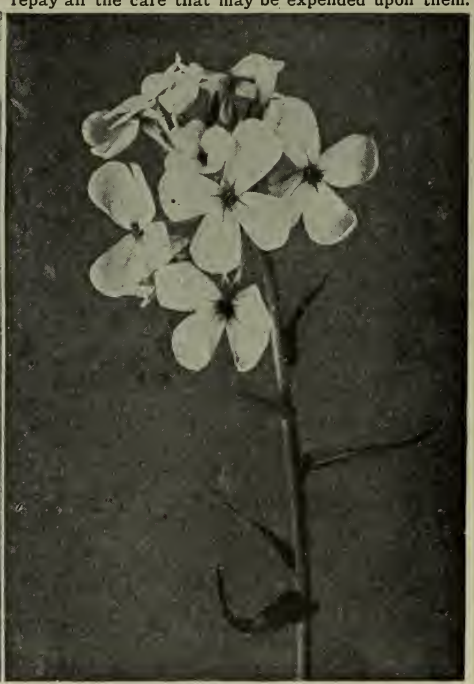
The malope is a showy plant with crimson and white flowers, that are very handsome when massed in groups. The plant grows to a height of about three feet, and the better and richer the soil the finer will be the bloom.

THE CHINA ASTER

China asters, when well tended, always make the garden bright and gay with colour. They should be grown together in masses in a deep, rich soil, and will well repay all the care that may be expended upon them.

THE MONTBRETIA

This graceful plant will thrive for years on a poor clay soil, and bloom well every year, but it always shows, by finer blossoms, the benefit of a better soil. It is, however, essential that the soil should not be too wet.



THE DAME'S VIOLET

The dame's violet sometimes grows wild, but only when seeds have been blown or carried from a garden, for it is not really a wild flower. The blossoms are like those of lady's smock, and are very fragrant at evening.

OUR LIVES AND THE NATION

CONTINUED FROM 5135

HOWEVER far back we go in the history of thought, we find it recognised that man is, as Aristotle called him, a social animal. "None of us liveth to himself, and no man dieth to himself." We are members one of another. No one knows what a solitary human being would be like, for the best of all good reasons, which is that there could not be a solitary human being. Each one of us is part of a great whole. People used to talk of "man before society."

No one, however, can now believe that there ever was a time when man existed and a state of union between different men did not exist; and we are all agreed that Aristotle is right, and that we are social by our very nature. The ancestors of mankind must have been social, and man has been social from the first.

One remarkable result of this, which has, curiously enough, been constantly forgotten, is that no one knows what a single human being unaffected by other human beings would be like. Not only do we not know, but we never can directly know. We are so made that it is quite impossible for a human being to exist at all apart from the influence of other human beings upon him. We come into the world helpless—less able to take care of ourselves than any other creature, animal or vegetable—and we remain helpless for a longer period than any other creature. From our first hour we are dependent upon others, who influence us from the cradle to the grave, so that every one of us is, in some degree, a social product, just as a motor-car is, or a book. We have been partly made by those who have surrounded us, and as no human being can grow up without these influences, it is scarcely worth while even to guess what a human being would be like without them. There could not be such a person.

But we do know that children a few years old have been lost and have managed to live in a wood or forest. As they have grown up we find that such beings have become less than human. They have missed the human companionship which every one of us needs, though, of course, they had it in their earliest years, or they could never have existed. Such persons can only be classed as idiots. Now, the word *idiot* comes from the Greek, and means a person who is by himself and has nothing to do with anyone else, or, as Ruskin puts it, a person who is entirely occupied with his own concerns.

If we take a grown-up, healthy, sane, intelligent human being, and separate him entirely from the company of all other men, he will lose his reason and become less than human. The solitary man becomes insane. All this might be proved and discussed at any length, for it is one of the most important facts in the world. We are members one of another.

THE GREAT TRUTH THAT A NATION IS LIKE A LIVING BODY

We must again go back to Aristotle, and even to Plato, his master, for the next great truth which we must learn—a truth which follows directly from what we have been saying. It is that a nation is not just a number of people, like a heap of bricks or grains of sand, but is a whole—just as a heap of bricks becomes a whole when the bricks are built up to make a house.

We can see that this must be so if every individual is, in part, a product of all the other individuals, and, on his part, helps to produce the others by direct and indirect influences upon them. So we have many phrases to express the idea that, in a sense, a nation is like a great living creature. We call it the body politic, or the social organism, and sometimes figure it as a noble woman—Columbia, for example. This comparison of a nation with the body of a living individual is a very valuable one.

On page 5255 of this book we read that though an atom is a whole, yet it is made up of parts which are called electrons, and we are only now beginning to understand the atom because the key to every fact about it lies in the nature of the electrons that make it.

On a higher plane we learn that the living body, though it is a whole, is made up of parts called cells, which are themselves alive; and we have only begun to understand the living body since we have begun to learn something about the nature of the cells which make it up.

HOW OUR OWN BODY HELPS US TO UNDERSTAND THE LIFE OF A NATION

So, also, we may imagine that the nation is a living body, but that we shall never really understand the life of a nation until we understand the nature of the persons who make it up. That is the great key which governs all true thinking—not the talk of politicians, but real thinking—about a nation. And that is why we have been very carefully studying the lives, the bodies, and the minds of ourselves, so as to lead up to the study of the nation of which each one of us is a part.

Now let us go a little more carefully into this wonderful comparison between an individual and a nation made up of many individuals.

When we learn the history of life, we find that living creatures were at first made of only one cell each; then of a few cells, which stayed together and were all alike; then of cells, few or many, running at last into billions of billions, which became different from one another. It is in this difference that the possibility of progress lay, some cells doing one thing and others doing another. The same is true in a nation, only it was noticed in the case of a nation long before it was understood in the case of a living body. In a nation we call this the division of labour.

THE DIVISION OF LABOUR, WITHOUT WHICH MEN AND NATIONS COULD NOT LIVE

This division of labour does not mean merely that when there is a lot of water to be carried from one place to another the labour is just divided between ten men, each of whom takes a bucket and runs backwards and forwards. It means, so to speak, that one man grows india-rubber and another manufactures india-rubber pipes; that another gets iron out of the earth, while another makes iron into taps; so that by this kind of division of labour the work is done far more easily than if all men did the same thing. Now, when a great Frenchman was studying the life of the body, he saw that this division of labour occurs in the individual body, just as it does in the body politic; and so he called it the *physiological division of labour*, by which name it has been known ever since.

Now with this key we can begin to understand many things. A nation has to live just as the body has to live; it has to have men to guide it, and the men who guide a nation correspond to the nerve-cells of the brain. It has to have men who make special things for the nation, and the manufacturers correspond to the gland-cells of the body. It has to have people like soldiers, scavengers, doctors, and nurses to protect it from enemies inside and outside; and the bodies of these protectors correspond to the white cells of the

blood, which kill microbes, remove dirt from the air-passages, and carry medicine and food to the parts of the body that have been injured. There is no end to these wonderful comparisons, but we must pass on to see the deeper meaning of them.

The body could not exist without the division of labour ; and the division of labour could not be carried on as it is unless the cells of the body were different. A nerve-cell cannot do the work of a red blood-cell, nor a red blood-cell that of a nerve-cell ; and neither of them can do the work of a muscle-cell ; and any of the three would make a very poor cell to cover the outside of our teeth. So we might go on endlessly.

Now, the point is that this is precisely true of a nation. If all the cells of the body were born the same, so to speak, it could never be a body at all ; and if all men were born exactly the same they could never make a nation.

THE DIFFERENCES IN PEOPLE THAT MAKE FOR THE GOOD OF THE NATION

Fortunately, all men are born more or less different ; our faces are all different, and it is now beginning to be seen that this difference in our faces corresponds to deeper differences which are in all of us. No doubt it is true, or ought to be, that we are all born equal in the sense that we all ought to have an equal chance, but nothing is more ridiculously untrue than to suppose that all men are by nature born equal, unless it be to suppose that they are by nature born the same.

We are all born different, and as for equality, we are born on very different levels by nature. But this is necessary and right. One man has great strength and endurance, but nothing else ; we cannot say that he is equal to a man who is a great thinker. But that great thinker may be very weak and puny. Each can help the other. Ages ago the Emperor Marcus Aurelius declared that instead of disliking or despising people who are different from ourselves, we ought to say " the universe has need of them." A more modern way of saying this is that " it takes all sorts to make a world." It certainly takes all sorts of cells to make a human body, and in the same way, it takes all sorts of human beings to make a nation.

One of the first needs for any nation is to realise these truths. We must learn that we are all dependent upon one another, both as regards our particular natures and as regards the particular kind of work that we do.

THE FIRST AND GREATEST DIVISION OF LABOUR THAT MUST ENDURE FOR EVER

Ages ago, in rude and savage tribes, though there always was division of labour, there was not nearly so much as there is now. The first and greatest and most eternal division of labour, which is that between men and women, is older than mankind and must endure for ever.

There was also a certain amount of division of labour between young and old, between the skilful and the strong, between the enterprising and the stay-at-homes. But just as the difference between a low form of animal and a high form of animal is to be found in the greater division of labour in the higher animal, in just the same way we find that high nations cannot exist without ever more and more division of labour.

More and more people become specialists, just as the five or six different kinds of white blood-cells are specialists, and all white blood-cells taken together are specialists as compared with other blood-cells, and all blood-cells together as compared with the rest of the body. This division of labour, or making of specialists, is a very great fact.

We all know the famous old story of the revolt in the body, when the other parts of it said that the stomach did no part of the work and got all the food. Of course, we see that that would be a very foolish thing for the body.

WHAT WOULD HAPPEN IF THE PARTS OF OUR BODIES QUARRELLED

It would be just as bad for the body if the stomach revolted and said it would keep all the food it received. The stomach would get indigestion and the rest of the body would starve. That is exactly what happens when rich men seize all the wealth and will not use it for the rest of the community. And so we learn that one part of the body and one kind of cells ought not to be at enmity with another part of the body and another kind of cells. " A house divided against itself cannot stand." Doctors know that perfect health is perfect harmony. It means that every

part of the body, like every part of a wonderful machine, is serving all the rest and is being served by all the rest, because it is doing its own work rightly in beautiful harmony with all the others.

THE ENEMY OF THE NATION WHO STANDS FOR ONLY A PART OF IT

The great truth we learn from this is that he is an enemy of the nation who stands for any part of it against the others—unless, of course, the others are in the first place injuring it. It must be an injury to the social body to set religion against religion, or class against class, or school against school.

In some distant day, the dawn of which can only be seen by the prophet's eye, the eye of faith and hope, men will learn that what is true of one nation is true also of the whole of the nations which we call mankind. They will learn that just as to oppose one part of the body against another is to injure it or to destroy it, just as strikes or labour wars, in setting one class against another, injure the social body, so wars between nations injure that mightiest body of all which we call humanity. But this will not be learnt until statesmen and soldiers and churches give up fighting for themselves and care only for those whom they profess to serve.

We have now learnt the great truth that civilisation and human progress depend upon human variety. This has the tremendous meaning, which no nation has yet realised, that, instead of taking all our children and giving them all the same education, we must find out what each child is best fitted for, and we must educate him for that.

WHY EVERY CHILD SHOULD BE EDUCATED FOR THE THING HE CAN DO BEST

The great reason why education is such a failure is not only that we set about it, as a rule, in altogether the wrong way, but also that we think we have merely to do something like making a number of coins out of metal by stamping it with dies, as they do at the Mint. But as two children may differ from each other certainly not less widely than a nerve-cell and a red blood-corpuscle differ, it is plain that if we give them exactly the same education, however skilful and devoted we are, we cannot be doing the best for both. The mightiest reform of education in the future—a reform which will help to make the new earth of men's holiest and truest dreams—will depend upon our realising that all children are different, and that the best for the child and the best for mankind is to find out what the child is best fitted for, and to educate him for that. More generally and worthily stated, this means that for the self and for society alike our duty is to develop as nearly as possible towards perfection the special nature of each child.

Of course, there are certain things which every human being, just because he is a human being, ought to know and ought to be able to do. Everyone ought to be able to read and write, for we are all social products and producers of each other, and reading and writing are the great instruments by which we affect each other, by which the wisdom of the dead benefits us, and by which our wisdom, if we have any, will benefit and mould and live in the far distant future when we are dead.

HOW A NATION'S STRENGTH DEPENDS UPON THE LIFE OF ITS CHILDREN

But it is another thing to say that all boys learning to read should read the same things. One is interested in science, another in poetry, another in mathematics, another would prefer to read books only for necessary purposes, while he would love to read the face of Nature—the sky and the soil. Why should we try to make a bad clerk of him when he might be a splendid farmer, taming the light and the soil and the water and the breeze to his will, making food for the life of himself and his nation? But this also is a great subject and would require many volumes to deal with fully.

As we go on thinking about a nation we shall see that there is one fact which is more important than all others. It is that all the individuals which make up this living being—the nation—die, and yet its life persists. This brings us to the great truth which stares us in the face, and yet which not one person in millions has really seen, that the destiny of a nation depends upon its parenthood and childhood. It depends partly upon the number of children that are born, partly upon their quality, and partly upon the care that is taken of them. Part of this great truth is already known and acted upon in some places.

THE NEXT STORY OF OUR OWN LIFE IS ON PAGE 5761

HELEN KELLER

Most boys and girls think that their lots are very hard indeed when they have to spend the pleasant, spring mornings in the schoolroom, poring over their lessons, when the air and the sunshine are calling to them to come out-of-doors and play. But how many of you have ever thought how blessed you are to have the ears to hear the teacher's voice, the eyes to see the "stupid" figures on the blackboard, the voices to ask and answer questions? And yet one little girl without all these things, being deaf and dumb and blind, has learned as much and more than many others with all their powers. Her name is Helen Keller.

Childhood Days

Helen was not born blind and deaf and dumb, but like other healthy, normal, young children, she laughed, and romped and shouted in the sunshine, until one day a dread fever seized her, and when she rose from her bed, the white heat of its flame had burned away the sight from her eyes, the hearing from her ears and the speech from her tongue. Soon she was strong and healthy again in body, but with what a terrible difference! Her communication with the noisy, happy, busy world about her had been cut off.

Of this time in her life, as a little girl, Helen Keller afterward wrote:

"My inner life, then, was a blank without past, present or future; without hope or anticipation, without wonder, or joy, or faith.

"It was not night — it was not day,
. . . . . .
But vacancy absorbing space,
And fixedness, without a place;
There was no stars — no earth — no time,
No check — no change — no good — no crime."

As the years passed by, the necessity for some adequate means of communication with those about her became imperative, for the growing child's vain efforts to express her needs and desires often ended in wild, uncontrolled bursts of passion, — it was the beating of the imprisoned spirit against its bars. Helen's parents began to recognise that something must be done, and that very soon; so they secured a teacher from a deaf and dumb institute by the name of Miss Sullivan.

Wonderful Miss Sullivan

The morning of the teacher's arrival, she led little Helen into her room and gave her a doll which the blind children at the institution had sent her. Then she slowly spelled into Helen's hand, in the deaf and dumb alphabet, the word "d-o-l-l." The child felt the motions and tried to repeat them, but she clearly did not know to what they referred. In the days that followed, still in that uncomprehending way, Helen learned to spell numbers of short words, such as *cake*, *hat*, *milk*, *spoon*, *candy*, etc. One day the light came suddenly. Miss Sullivan had been trying to explain to her the difference between "w-a-t-e-r" and "m-u-g," but the child had persisted in getting them mixed. Later on the two walked down to the well-house, where Miss Sullivan pumped the mug full of water. As the cold liquid splashed over Helen's hand, the teacher quickly spelled the word "w-a-t-e-r." The child dropped the mug with a crash, as a new light suddenly illuminated her little face. She knew for the first time that everything had a name. From this time on little Helen Keller's education proceeded by leaps and bounds, for the child, naturally bright and quick-witted, thirsted for information and poured forth questions ceaselessly. Miss Sullivan cleverly led the child on, step by step, never missing an opportunity to unfold and enrich her active mind.

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LEARNING TO TALK AND READ

When Helen was ten, she began to learn to talk. It was a long and wearisome task, for she could not see the lips of her teacher, as a child who is merely deaf and dumb can do, but slowly struggling along step by step, she began to make her way out of her "prison of silence." Later Miss Keller wrote of the almost pathetic joy this gave her. "No deaf child," she says, "who has earnestly tried to speak the words which he has never heard can forget the thrill of surprise, the joy of the discovery which came over him when he uttered his first word. Only such a one can appreciate the eagerness with which I talked to my toys, to stones, trees, birds and dumb animals, or the delight I felt when my dogs obeyed my commands."

Meanwhile Helen had also been learning to read in the Braille, or raised-letter type, and she soon took up various studies, — History, French and German. In 1896 she went to the Cambridge School for Young Ladies to prepare for Radcliffe. Miss Sullivan read all the books to her, and accompanied her to the classes, where she spelled into her hand all that was said; for it was impossible for teachers to give the afflicted girl special instruction. The bravery and patient persistence of Helen under all her handicaps brought its reward. In 1899 she successfully passed the final examinations for Radcliffe College.

THE LITTLE GIRL BECOMES AN ACCOMPLISHED WOMAN

But though the struggle to enter college was ended, the struggle to keep up with her class in the regular college course had just begun. Not an easy thing for a bright girl with all her normal faculties, it was trebly hard for Helen Keller; but her ambition and courage spurred her on to surmount all difficulties, and she graduated with her class with a very good record.

Miss Keller has written several books and numerous articles, and everywhere she goes she is greeted and spoken of as a highly intellectual woman, with a clear brain and remarkable insight. Some day when you read the wonderful poem of The Stone Wall, you will marvel how one who had no eyesight could possibly describe to you, just as though she saw it all, the light and shadow and colour playing over the Old Stone Wall.

In one of her books she speaks of an exquisite pleasure that comes to her through the touch of her hand: "Whatever moves me, whatever thrills me, is as a hand that touches me in the dark, and that touch is my reality. I have accumulated by means of touch. The delicate tremble of a butterfly's wings in my hand, the soft petals of violets curling in the cool folds of their leaves or lifting sweetly out of the meadow-grass, the clear, firm outline of face and

limb, the smooth arch of a horse's neck and the velvety touch of his nose — all these, and a thousand resultant combinations, which take shape in my mind, constitute my world."

Yet this clever, happy woman was once a little girl shut up within the four walls of her infirmities. It was the wisdom of her teacher and the eager desire for knowledge in the heart of the girl herself that wrought this seeming miracle; and the next time you are grumbling over the "tiresomeness" of your lessons, it would be well to think of the little girl who conquered every one of them and yet who had neither ears, nor eyes, nor tongue with which to do it.

WHAT THIS ARTICLE TELLS US

EVERY boy knows something about baseball, though not all realise how important the game has become in the United States. Below you learn something of the importance of the game, and also the chief rules are given in simple language, so that two teams of boys may play without further instruction. The description will also enable sisters and mothers to understand the game.

CONTINUED FROM PAGE 5202

AMERICA'S NATIONAL GAME

ONE of the first desires of a boy is a ball of some sort, and many of our most interesting games are played with a ball or balls. One can mention, among others, tennis, football, polo, ninepins, basket-ball, cricket and, greatest of all, baseball.

The last named can fairly be called the national game of the United States. In every part of the country, when the weather permits, hundreds of thousands of boys and young men play at every opportunity. It is the most important game at the colleges and boarding schools during the spring months, and then besides thousands of men play the game for regular salaries. A good player may receive several thousand dollars for the season.

Nearly every large town or city has one or more professional teams, which play with the teams from other cities, and millions of dollars are invested in buildings and grounds for the purposes of the game.

In the largest cities some games have drawn the attendance of more than 40,000 spectators. Among the enthusiastic patrons of baseball are high officers of the government, and officers of the Army and Navy. Many distinguished men attend every game their engagements will permit, and many women also are enthusiastic spectators.

The oldest organization is the National League, which is now composed of a club in New York, Chicago, Pittsburgh, Philadelphia, St. Louis, Cincinnati, Brooklyn and Boston. The American League is made up of a club in Philadelphia, Detroit, Cleveland, New York, Chicago, Boston, Washington, and St. Louis. These are called the "major leagues."

In 1914 the championship of the National League was won by Boston, and the championship of the American League by Philadelphia. These two clubs then played a series for the world's championship, which was won by Boston.

Though the game is played more in the United States than anywhere else, it has also gained a foothold in Canada, Australia, Japan, the Philippine Islands and many other countries.

Below will be found a description of the game written in simple language.

THE FIELD

A regulation baseball field consists of a level stretch of ground upon which is marked out, by white lines, a square, the sides of which measure ninety feet in length. The space within these lines is called the *diamond* or the *infield*. For boys' use it is usually smaller. At each of the four angles is set a *base*. The black one, called the *home plate*, is set level with the surface of the ground. For important games it is made of whitened rubber and measures seventeen inches across. The three other bases are flat bags filled with sawdust, fastened to pegs driven into the earth. The bases at the other corners of the diagram are known, respectively, as *first base, second base,* and *third base.*

The lines running from the home plate to first base and third base are prolonged, as you may see. All territory between them is called *fair* ground; the space behind and outside of the diamond is called the *outfield.*

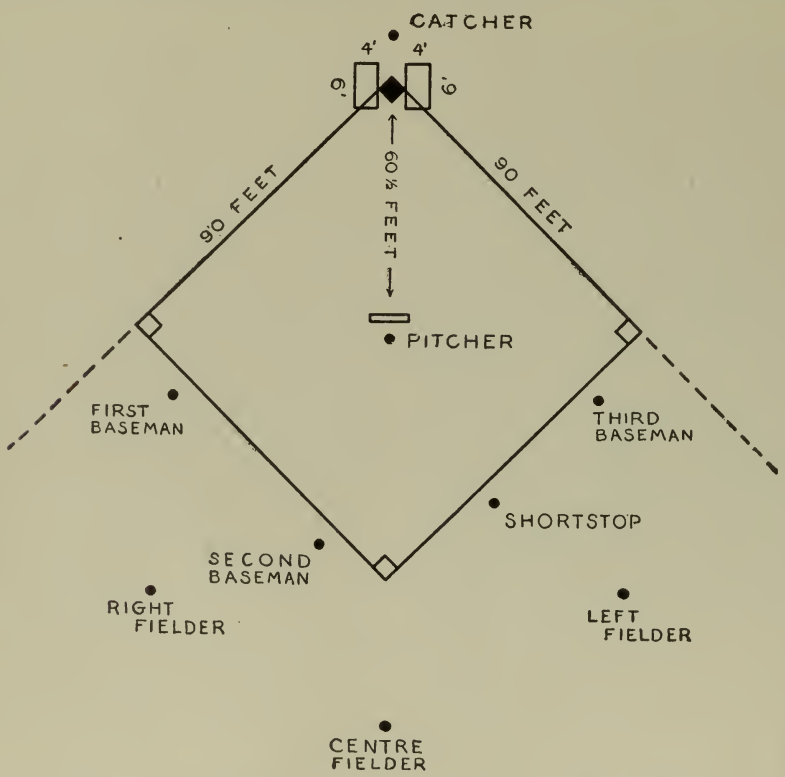
THE PLAYERS AND THEIR POSITIONS

A game is played by two teams of nine players on each side. These are known as: the pitcher, the catcher, the first baseman, the second baseman, the shortstop, the third baseman, the right fielder, the centre fielder and the left fielder. The pitcher and the catcher constitute the *battery.* The three basemen and the shortstop make up the infielders. The three other players are the outfielders.

When a team is *in the field* its players take the positions indicated in the diagram. The catcher's place at C, a few feet behind the home plate. The pitcher stands near the centre of the diamond, at equal distances from first and third base and just short of an imaginary line joining them. This region is known as the *pitcher's box.* The first and third basemen take positions a little inside of and back of their bases. The second baseman stands slightly back of his base and somewhat over toward first base. The station of the shortstop is near the point indicated, between second and

third bases. The three outfielders are placed more or less as indicated by the black dots in the diagram. The entire team is thus arranged to cover the greatest amount of fair ground.

Each player is equipped with a padded glove as a protection in stopping thrown or batted balls. The ball is made of yarn wound about a rubber and cork centre and covered tightly and smoothly with leather. The regulation ball weighs between 5 and 5¼ ounces, and measures between 9 and 9¼ inches in circumference. For boys' games a smaller ball is better adapted. The bat is a round wooden club, not longer than 42 inches, nor over 2¾ inches in diameter at the thickest part. The gloves or mitts of the catcher and the first baseman are larger and more heavily



padded than those of the other players; in fact, there is no restriction governing their size. In addition, the catcher is provided with a mask made of heavy wire, and a padded or inflated chest-protector to guard against injury from the swift throws of the pitcher or foul tips from the bat.

THE GAME

The two teams alternate at bat and in the field. The side at bat endeavours to force runners around the bases against the opposition of the team in the field. Every man making the circuit of the bases and arriving at the home plate safely, scores one *run* for his side. When, however, three men of the team at bat have been *put out by the* opposing fielders, that is rendered incapable of advancing around the bases or aiding in the advance of a team-mate until their turn comes around again in the regular batting-order, then the side which has been at bat must take the field, while the players of the side which has been in the field now take their turn at bat. When they have had three men put out, they in turn take the field while the other side comes to bat again. One such period in which each team has one turn at bat and one in the field is called an *inning*. Nine innings constitute a game, which is won by the team with the largest total score of runs. In case of a tie, as many extra complete innings are played as are necessary to give one team or other the lead. The members of each team take their turns at bat in regular rotation, according to the batting-order which is arranged by the captain at the beginning of the game and must be adhered to throughout. When a substitute replaces a player, he fills the same place in the batting-order as the man whose place he has taken.

The game begins, then, with one team in the field and the other prepared to bat. The home team has the choice of going first to the bat or to the field. Behind either the catcher or the pitcher is usually the position of the *umpire,* whose duty it is to render decisions on all plays. The first batter takes his position at the side of the home plate and

facing it, but with his head turned to watch the opposing pitcher. It is now the problem of the pitcher so to throw the ball that it will pass over the home plate and yet make it difficult for the hitter to meet it squarely with his bat; or else to make the batter think that the ball will cross the plate, and thus force him to strike at a ball out of his reach. If the pitcher is successful in delivering the ball over any part of the home plate, at a height between the knee and the shoulder of the batsman, and the latter does not hit it, it is called a *strike,* whether the batsman has struck at it or not. Again, if the batsman strikes at a pitched ball without hitting it, a strike is likewise called, whether the ball has passed over the plate or not. Three strikes, if the catcher holds the ball on the third, render the batter out. On the other hand, if the ball, after being delivered by the pitcher, fails to pass over any part of the plate, or passes over the plate above the shoulder or below the knee, then, provided the batter does not strike at it, it is called a *ball.* Four such *balls,* delivered before the *strikes* have totalled three in number, permit the batter to *take his base,* that is, to proceed to first base without being liable to be put out. Further, if a batsman is struck by a pitched ball, provided he has not struck at it and the umpire is satisfied that he had made reasonable effort to avoid being hit, the batter is entitled to take his base. Decisions on pitched balls are in every case announced by the umpire, whose authority is supreme in all questions of judgment or opinion. In the most important games there are two umpires, one of whom decides on balls or strikes and the other watches the bases.

Meanwhile, of course, the batsman is at liberty to try to hit any ball he pleases that the pitcher throws. A ball so hit may be called in either of two ways, depending on the direction it takes from the bat. A batted ball that falls and remains on foul ground, or a ground hit that first strikes fair territory and then rolls to foul ground beween the home plate and first base or between home and third base, is called a *foul hit,* or, briefly, a *foul.* Similarly, a *fair hit* or a *fair ball* is a batted ball that drops on fair ground and remains within it; but if a batted ball is touched by a player on fair ground and is then diverted over the foul line, it is still a fair ball; again, a ball batted to the *outfield* and first falling on fair ground, is a fair ball, even though it later rolls into foul territory; a grounder, i. e. a batted ball rolling along the ground, which first strikes foul ground and then rolls into fair territory between home and first base, or home and third base, is a fair ball. If a batted ball, whether fair or foul, is caught by any fielder before it touches the ground, the batsman is out. Such a batted ball which rises in the air or travels a considerable distance before touching the ground, is called a *fly* to distinguish it from a grounder. On a foul ball, even though not caught, the batsman cannot advance to first. On a fair hit ball, however, unless it is caught as a fly by a fielder, the batsman is entitled to run to first base and to advance as far around the bases as he can without being touched by the ball in the hand of a fielder when the runner is not himself touching a base with any part of his body. If the base-runner is so touched, he is out. To put a runner out on his way to first base, a fielder need not touch him with the ball, but need merely hold the ball securely while with any part of his own body he touches first base, before the runner arrives there. At all the other bases, however, including the home plate, as well as between any two bases, a fielder to put a runner out must touch him with the ball while the runner is off his base, except as mentioned in the next paragraph. If the fielder, in attempting to make a put-out in this way, drops the ball, the runner is safe.

Let us suppose, then, that our batsman has reached, let us say, first base safely. He has then completed the first quarter of his journey to the home plate. The other three quarters still lie before him, filled with dangers for the unwary runner. The man on base must be constantly on the alert, ready to advance on a hit by a team-mate, or a slip or moment of forgetfulness on the part of the opponents. Yet, at the same time, remembering that they too are watching for a chance to take him unawares away from the haven of a base, he must foresee, if possible, the moves of the enemy and refuse to be trapped. Never must a base-runner allow his mind to be distracted from the immediate object of the game; always must be known exactly what player has possession of the ball and be ready to act should that player throw it to catch him. On a safe hit by a succeeding batsman, the base-runner may advance as many bases as he thinks he can in safety. In fact, when a runner is on first base, or on second with first occupied by another runner, or on third with both first and second occupied, the runner *must* advance when the batter hits a fair ball, to make room for the batter, who on hitting the ball becomes himself a base-runner. Otherwise, since only one runner can occupy a base at a time, the ball need merely be thrown to the next base, which is touched by the fielder receiving the ball; the runner who should have reached that base is thereupon out without having to be touched with the ball. Such a play is called a *force-out.* It frequently results in a *double play;* this means a play by which two men are put out. A double play is completed after a force-out, when the ball is thrown to a base before the batsman has reached there, thus putting him out also.

On a *fly which is caught,* however, a runner must not leave his base until the ball has actually been caught. If he does he is out if the ball is returned to that base before he can return to it, thus again becoming one of the victims of a double play. Immediately after the catch, he may advance if he can. On a long fly-out to the outfield this is very often possible.

The instant the third put-out has been made, all attempts at advancing or scoring are of course useless. Indeed, after two are

out, a run is not scored by a runner crossing the plate on a batted ball as a result of which the batsman or some other base-runner is put out for the third out, even though home may have been reached before the put-out was actually made. A base-runner struck by a batted ball is out.

The following are additional terms commonly used in connection with a ball game. The term *a hit* is usually restricted to a batted ball on which the batter reaches base safely, without profiting by an opponent's misplay or causing the put-out of another base-runner. A hit for one base is called a *base hit* or a *single;* a two base hit is also known as a *double* or a *two-bagger;* a three base hit, a *triple* or *three-bagger,* a hit for all four bases, a *home run.* A *bunt* is a slow hit merely tapped within the infield by the batsman; if a bunt results in a foul, a strike is called. A *time at bat* is recorded each time a player takes up and completes a turn at bat; if he receives a base on balls, or goes to first as a result of having been hit by a pitched ball, or makes a sacrifice hit, he is not charged with a time at bat. A *sacrifice hit* is either a bunt which results in the batsman's being put out on which a team-mate is enabled to advance a base, or a fly-out to the outfield which makes it possible for a base-runner to advance safely after the catch; a sacrifice is, of course, useful only when no one or only one is out. A player's *batting average* is a record of the percentage of safe hits he has made out of his total number of times at bat. A *foul tip* is a strike on which the ball has been merely touched by the bat; it counts as a strike in all cases, but does not in itself count as an out if caught, as would a foul fly.

A *put-out* is, as its name implies, the actual putting out of a batsman or base-runner by a fielder; thus in the case of a strike-out, the put-out is credited to the catcher since he handles the ball last in the operation. An assist is credited to a player when he, by a fielding play, aids in the put-out by making possible its successful completion by another. An error consists in a fielder's misplay in handling the ball, so as to make a probable put-out fail, or so as to enable a runner to gain a base, which, under perfect play, he would not have reached.

A *balk* is a false motion made by the pitcher to deceive a base-runner; it consists usually in making a motion to deliver the ball to the batsman and failing to do so, or in pretending to throw to first base when it is occupied by a runner and failing actually to throw the ball. When a balk is called by the umpire, all runners who are on the bases may each advance a base without being put out. A *wild pitch* consists in the pitcher's delivering the ball to the batsman so high or so far out as to be out of reach of the catcher. A *curve* is a ball thrown in such a manner by the pitcher as to change its direction sharply just before reaching the plate. A ball that curves to the left as seen from the pitcher's position is called an *out-curve;* one to the right, an *in-curve.* A *drop* deflects downward; a *raise-*ball rises slightly. In throwing these curves the wrist is twisted sharply at the moment the ball is let go, so that the ball has a rapid revolving or spinning motion at the same time that it is travelling in a direct line toward the plate. This spin of the ball creates a cushion of air piled up on one side of the ball, the resulting unequal pressure causing the ball to swerve as its speed of flight lessens. The ball curves in the direction in which its front portion is turning as it revolves during its flight. *Change of pace* consists in varying the speed at which the ball travels from the pitcher's box to the plate.

These are the principal rules of the game, and they will enable boys to play the game. The best way to learn to play baseball, however, is to play, and when any dispute arises consult the book of rules which can be bought for a few cents. Only experience and practice will make good players.

PUBLIC INTEREST IN THE GAME

The following paragraphs taken from "Spalding's Official Base Ball Guide" show the deep interest of all classes of people in the United States, in our national game.

"In recent years our Presidents of the United States have shown a lively interest in the national game, but none of them has been a more loyal and devoted 'fan,' than President William H. Taft.

"The season of 1911 was formally opened by President Taft in Washington in the presence of 20,000 spectators, and he joined with spirit in the cheers of the home 'fans' as they 'rooted' for Washington to win in a contest which was completed with one of the most spectacular finishes on record in an opening game. Cabinet officers, Justices of the Supreme Court, Senators, Representatives, members of the Diplomatic service, and other distinguished guests were brought to their feet in a chorus of cheers when Washington earned a victory from the Boston club by a great rally in the sixth inning.

"While the season of 1911 was not the banner year of all leagues which are in the general organisation, it was by far the best year in the history of the national game from the standpoint of increase in world development and increase in amateur circles.

"From a strictly professional standpoint it was a good year, both financially and from an artistic standpoint, to the major leagues. It culminated in the most famous World's Series in the history of the sport. Not only were the contests which were played between the Philadelphia American League team and the New York National League team the most thrilling and exciting series of games of their character in national history, but the attendance far surpassed all previous records.

The season of 1912, however, surpassed that of 1911. The World's Series, this year between the Boston Americans and the New York Nationals, drew the largest attendance ever known. Eight games were played, four being won by Boston, three by New York, one a tie, giving the championship to Boston.

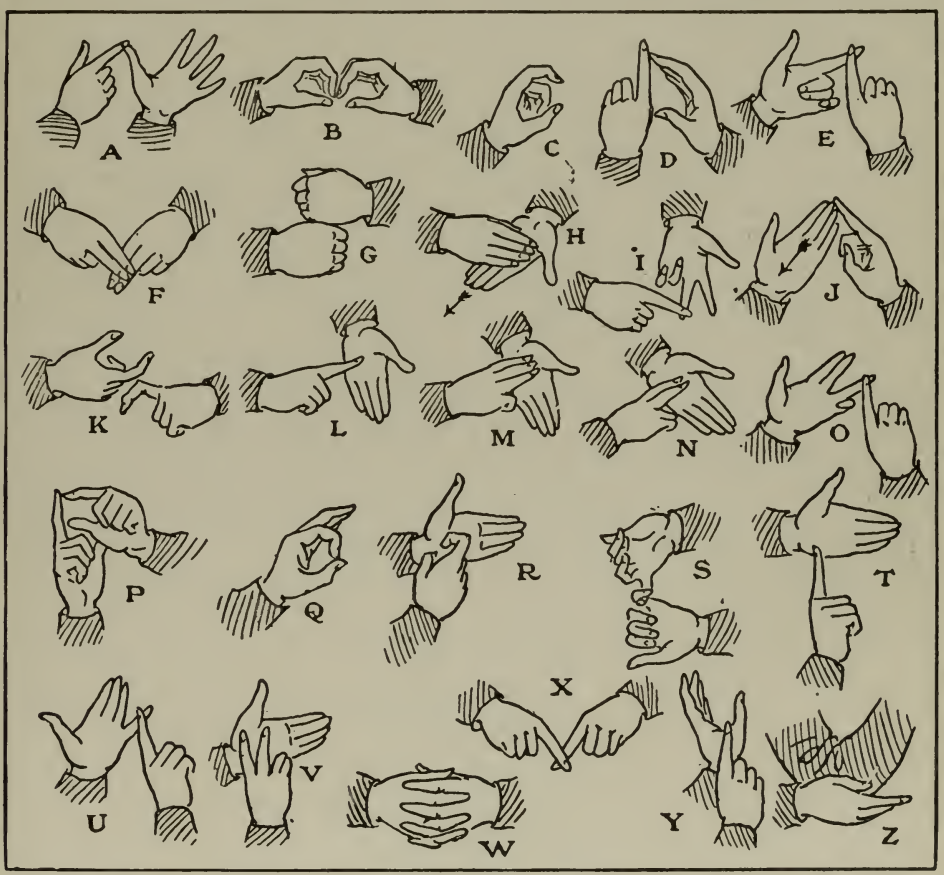
HOW TO TALK TO THE DEAF AND DUMB

THE scientific method of educating the deaf and dumb, or, as they are more accurately called, deaf mutes, is by word of mouth, and they are taught to watch the lips of the person speaking to them, and from the movements of the mouth to understand what he is saying. It is amazing with what skill a well-trained deaf mute is able to follow a conversation in this way.

The older method of communicating with persons afflicted in this way was by speaking with the hands, and as there are still many thousands of deaf mutes who know of no other method of carrying on a conversation, it will be well if every boy and girl learns the deaf and dumb alphabet, as it is called, so that, should the necessity arise, they will not be cut off from all communication with the deaf person.

The complete alphabet is given on this page, and can be easily learnt from the pictures. In every case, with the exception of H and J, the hands are stationary while in position to form the letter. In the case of H, the whole of the right hand is moved down the left palm in the direction of the arrow, and to form J the right forefinger is drawn down the left hand from the tip of the middle finger, as indicated in the picture by an arrow. In talking to a deaf mute, the words are spelt out, and it might seem that this would be a very tedious and lengthy process. As a matter of fact, it is astonishing with what rapidity a conversation can be carried on when those using the sign language are skilful and well practised in the art.

One may sometimes see at a place of worship a little group of deaf mutes seated in a corner of the church, with an interpreter giving in the finger language the substance, at any rate, of the sermon. To make a break between the words it is common to separate the hands and jerk them downwards, or to make the motion of snapping the fingers. Of course, those who talk much with deaf mutes in this way soon acquire a whole number of signs to express well-known words or thoughts without spelling them. For instance, holding up the right thumb means good, and the right little finger signifies bad. To point upwards means God or heaven, and so on. Numbers up to about twenty are denoted by holding up the necessary number of fingers, and larger numbers are usually spelt right out.



THE ALPHABET, FORMED BY THE HANDS, WHICH IS USED IN TALKING TO DEAF MUTES

THE GAME OF "WHAT IS WRONG?"

Some games teach us how to use our bodies, and others teach us to use our brains. The game of "What is Wrong?" develops the mind by testing our powers of observation.

We all know that in every house certain things have a regular place. For instance, we may have a clock on the mantelpiece, and standing upon each side of it a vase.

Now, these things usually occupy the same place always. They are never shifted except for cleaning and dusting. That position on the mantelpiece is their recognised place.

We may possibly get so used to seeing a photograph placed at a certain angle upon a certain spot that it seems to become part of the room, and we cannot imagine it in any other place except that which it occupies. We feel sure that if it were shifted to any other spot we should notice the fact at once. In all probability, if, instead of a little thing like a photograph, a large piece of furniture were moved, we should notice it quickly. But it is really wonderful what we do not see, even when we are looking at things, if our mind is not actively concentrated and our power of observation is not acute.

In playing the game of "What is Wrong?" one player stops in the room while all the others go outside the door. The player in the room makes some little alteration in the position of a thing that usually stands upon a certain spot, or is placed in a certain way, and when he admits the other players he asks them what is wrong. The players, as they discover what is wrong, sit down until all have made the discovery or given it up. Then the player who first found out what had been changed remains in the room and moves something in his turn while the others are outside, and so on. Before we begin to play the game, we should fix a certain time, say, two minutes, in which the changed object must be pointed out. If in that time no player succeeds in discovering the thing that has been moved or altered, then the thing is shown, and the players go outside again, the same player remaining in the room and altering the position of something else. If we like we may give points for success. The one who remains in the room scores five points if his alteration is not discovered by any of the others. If, on the other hand, the changed object is discovered, then the first discoverer scores five points. At the end of the play we count up the points, and the player who has scored the greatest number wins the game.

A variation of the game is for the player who remains in the room to change not one object only, but a number. The other players then have more to discover, and there is less constant walking in and out of the room.

There are many things that we may alter in every room. For instance, we might turn a photograph upside down in its frame; if the poker is kept on one side of the fireplace we can change it to the other side. Should a piece of music be on the piano we could turn it upside down. Vases may be changed, and pictures that hang at an angle from the wall may be made to hang flat against the wall; books may be turned over on the table so that their front cover is downwards. In fact, the number of things that can be altered is almost endless, and the game can be played in any room that is available.

HOW TO READ THE MARINER'S COMPASS

Every boy, especially every boy scout, ought to be able to read the mariner's compass—that is, to repeat the 32 points from the North by the way of the East and round to North again—without any hesitation. This is one of the first things that midshipmen and sailor boys are taught to do, and they also learn to read it backwards, so as to be thoroughly familiar with all the 32 points. It is only when we know them properly that a compass becomes of real use to us when out sailing or walking. The picture here shows the position of the 32 points. The four cardinal points are marked N., S., E., and W., and represent North, South, East, and West. The arrangements of the points between the cardinal points is similar in all four quarters of the compass card. Midway between N. and E. is North-east, marked NE., and midway between N. and NE. is NNE., called North-north-east. The point midway between NE. and E. is East-north-east, marked ENE. The remaining points are N b E., called North by East; NE b N., North-east by North; NE b E., North-east by East; and E b N., East by North. The other quarters of the card have corresponding names. As we know, the magnetic needle usually points to the magnetic pole, and not to the geographical pole. The difference between the two directions is called the variation, and as the variation of the compass differs in different parts of the world, sailors have to learn how to allow for this, wherever they may be. If the variation were not taken into account by seamen, the consequences might be very serious indeed, as a slight deviation from the true course that should be sailed by a ship might send it upon the rocks, and result in the vessel being wrecked and all hands lost.

The thirty-two points of the compass

MAKING A FRETWORK BRACKET

ANY boy or girl accustomed to handling tools can make the daintiest and prettiest little fretwork article with the aid of a fretsaw and some fretwood. Patterns and designs can easily be obtained, and they range from the most intricate and delicate model to the simplest photograph frame. From the large number of articles open to selection, we shall choose a corner bracket of dark wood, such as will support a little vase of flowers.

An ingenious fretworker can utilise the wood of an old cigar-box for a bracket. But whatever piece of wood is chosen, it should be quite free from knots and blemishes, close-grained, unwarped, and neither too soft nor too hard.

It is always well to get a few really necessary tools first, and add more to them as they are required. Among the things that we must have are some saw-blades, a fretsaw frame, and a small drill. An ordinary small saw will be found useful in the first rough shaping of the wood for the parts of the bracket. And in putting the parts together we shall want a few brads and a little hammer.

Now we can begin to make the bracket. We first draw the design or gum the paper pattern that we have obtained on to the wood, taking care to see that the grain of the wood runs lengthways. When the gummed paper is quite dry, we use the drill to make a hole in each of the spaces that has to be sawn away in the pattern covering the wood, taking care to place a board beneath the fretwood to prevent the drill from making holes in the table. We fix a saw-blade into the saw-frame at one end, pass the saw through one of the holes pierced in the wood, and fix the saw-blade to the other end of the frame, so that the blade can work straight up and down along the line of the pattern. Beginners will find difficulty in turning corners, and for this reason it is well to practise a little with lines, angles, and curves on an odd piece of wood before starting on an elaborate piece of ornamental work.

It is better to saw out the inner spaces in the wood first, and clear out those in projecting parts of the pattern last, as these are the most fragile and likely to snap off. Skill and deftness are needed in handling the fretted work. Even when all care is used, from some flaw in the wood or undue pressure at one part, the wood at the edge may snap. This can be glued on again, and even when the breakage is towards the centre, the broken portion may be sawn off, a new piece of wood glued on, the outline traced upon it, and the article finished. If the saw works with difficulty, we can rub a little soap on the back of the saw-blade. Having sawn out all the spaces in the three pieces of wood for the bracket—two for the sides and one for the shelf—we must smooth the edges where the saw has worked, and clear off the paper pattern. The latter can be removed by wetting it with warm water. If some of it still adheres, it can be rubbed off with glass-paper when dry. Sand-paper is also used for smoothing the rough edges that may be left by the saw. To put the parts of the bracket together, we may glue the edges. This is the easiest method if the bracket is small and not intended to support any great weight. But with a larger bracket the parts can be jointed and fastened together by little screws or small brads. Jointing and nailing is the method followed in putting together the bracket shown in picture 3 on this page. It will be seen that on each of the two sides of the shelf, in picture 2, little projections are left, to fit into the oblong holes that are cut to receive them in the upright parts of the bracket. Only one of these upright pieces is shown in picture 1, and the three projections at the back are to fit into three corresponding recesses that have to be sawn at the back of the other upright piece. We shall now want to stain or polish our bracket in some way. Polishing with a little wax polish, bought ready made, is a simple method of treatment. We oil the wood by passing over the surface a piece of rag dipped in boiled linseed oil. The bracket is then allowed to dry, and is rubbed over with a piece of dry rag, then the wax polish is applied to the bracket with a little pad of linen. A drop or two of polish is placed upon the pad, and the bracket is then rubbed with a light, circular movement. This process is repeated until the whole bracket attains an evenly-polished surface. If we prefer it, we may varnish the bracket with oak varnish, or we can use some of the many stains or enamels which are sold everywhere. In wax polishing we should be very careful to rub lightly. This is the secret of the whole art of wax polishing, for if we rub vigorously we shall at once make the surface dull. We may find it difficult at first, but in the end we shall succeed.

1. Design of one of the upright parts of the bracket

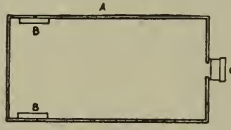
2. The shelf of the bracket

3. The corner bracket when it is finished

A CAMERA THAT COSTS A PENNY

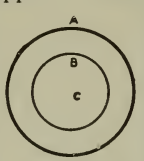
UNFORTUNATELY, cameras still cost a good deal of money, and most of them look so complicated that it may hardly occur to us that we can make one ourselves. We see them in the shops and think they are most wonderful things, just because they are covered with shiny brass levers and screws. We feel quite sure we could never make anything like them. But we are going to see how we can make a camera that will take real photographs of places or of people, and, when it is done, we shall find that it has cost just one cent.

Now, first of all, we must clearly understand of what a camera consists. In its simple form it is merely a box with a lens at one end and a support to hold a photographic plate at the other.



1. The body of the camera with the lid removed
A. The oblong cigar-box
B. Supports for the plate
C Lens fixed in a pill-box

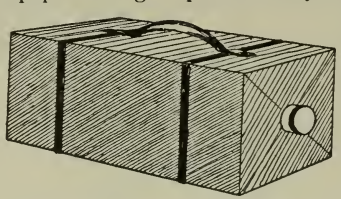
With a cigar-box we can make an excellent camera, which will work well without a glass lens at all. The whole secret of this camera lies in the fact that it is possible to take photographs with a lens that is made out of a piece of the tin foil that candy or tobacco are wrapped up in. All we have to do is to make a tiny hole in the tin foil with a pin or a needle, and that hole will form the lens. We shall understand all this clearly when we fully understand the various illustrations.



2. The little lens
A. Rim of pill-box
B. Tin foil lens
C. A small hole

The camera is made out of a cigar-box. It is one of the boxes made to hold one hundred cigars, and it will be large enough to take a photograph measuring 4¼ by 3¼ inches. That is the usual quarter-plate size to be seen in most photographic albums.

When we have found a cigar-box, we must first tear away all the inside paper lining. Then we cut little strips of wood and glue them to the sides, so as to form supports that will hold the photographic plate. The illustration shows these supports clearly. Now, in the other end of the box, we make a small hole, about half an inch across, and over it we must glue a small circle of tin foil, out of which we shall presently make the lens.



3. The camera as it appears when quite complete, wrapped in brown paper, with a rug-strap for carrying.

When we have done this, we must find a cardboard pill-box and cut a hole in the bottom a little smaller than a ten-cent piece. Then we glue the box over the tin foil, which will, of course, just show through the hole in the bottom.

Now, with the smallest needle we can find, we make a tiny hole in the tin foil, and should be careful to make it exactly in the centre of the part that shows through the bottom of the pill-box.

The lens is now complete. The lid of the pill-box will form the cap, which we remove for a few moments when taking a photograph and replace as soon as finished.

We are, of course, quite aware that it is most important that no light should enter a camera except through the lens. There must be no little chinks or cracks through which rays of light can creep and spoil the photographic plate. Therefore, we must cover the camera in such a way that there is no possibility of the tiniest glimmer of light getting in except through the little hole in the tin foil.

The simplest way is to make a cover out of thick brown paper. For one cent we can buy a large sheet at a stationer's shop. This we must wrap twice round the camera and then fold the ends over neatly, just as if we were wrapping up an ordinary parcel. Then cut a hole in the paper at one end for the lens to peep through. If we wish it to look particularly neat, we can put a small rug-strap round it all. The camera is now quite finished, and we can carry it about with us anywhere, for it will look just like an ordinary brown-paper parcel, and nobody will guess what the article really is.

When we wish to take a photograph with it, we must buy some quarter-plates at a photographic shop. The cost is not very great. Then we go into the dark-room that most photographic shops have ready for customers. We shall find it is quite dark except for the dim red light that comes from a lamp or window covered with red glass, cloth, or other material.

By this light we undo the strap of the camera, take off the brown-paper cover, open the lid of the cigar-box, and then slip one of the photographic plates behind the supports at the back. One side of the plate is shiny and the other dull white. It is the dull side that must face the lens. When the plate is in, the box must be closed, the brown paper and strap replaced, and then we can go out and take our photograph.

For the first attempt we had better choose a view. We may photograph the house in which we live.

We must rest the camera on something that will keep it steady; the top of a wall will do. Then, when we are ready, we merely take off the lid of the pill-box and keep it off for about six seconds. Then we replace it, and the photograph is taken.

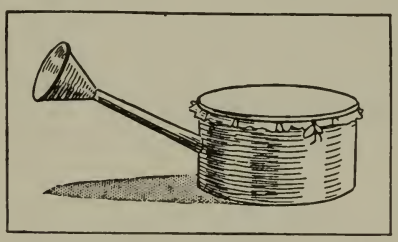
If it is a dull day, with clouds in the sky, we should keep the pill-box lid off a little longer—perhaps ten or twelve seconds. But if the sun is shining, six will be quite enough. Of course, we must be careful that nobody is moving about in front of the house while we are taking the photograph. If anyone walked past during the few seconds the pill-box lid is off, the picture would be spoiled.

The process of developing the plate and printing on paper is described on page 4245.

A BOX THAT DRAWS VOICE PICTURES

It is possible to draw beautiful designs with the voice, the designs varying in form according to the strength or pitch of the note that is spoken or sung. On page 4072 are given some of the designs that can be drawn in this way ; and it is possible for a boy to make a simple instrument that will enable him to draw voice pictures of this kind.

Get one of those small tin saucepans that are sold at the hardware shop for about five cents. Then open the end of the handle, if it is not already open, and also make a hole in the saucepan where the handle joins it, so that the handle is really a tube into the saucepan. The shop-keeper will probably do this for us for a small charge if we ask him. Now take a piece of thin india-rubber, such as toy balloons are made of, and tie this tightly over the top of the saucepan, just in the same way as covers are tied on to jam-pots, taking care that the india-rubber is really well stretched. A piece of a bladder or toy balloon does excellently for this purpose. A paper funnel made like a grocer's sugar-bag, with the edge stuck down, should be inserted in the end of the handle, and our eidophone, a name which means "to copy sound," is complete so far as its construction is concerned. The picture on this page shows its appearance.



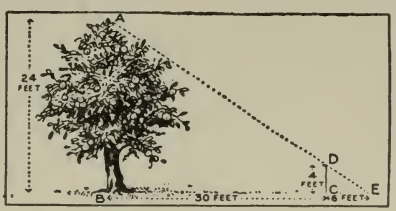
A little box that makes voice pictures

We now have to prepare the surface of the rubber covering so that our voice may be able to draw designs upon it. There are various ways of doing this. We may put a very thin layer of coloured glycerine over the drum, or we may spread the finest sand evenly on the surface. Then, if we sing a note steadily and continuously down the funnel, the sand or glycerine will gradually take a regular form until some beautiful and delicate geometrical design is produced. By practice, of course, we shall learn to sing the notes continuously at suitable pitches, and according to the change in the note so the design will change. The pictures on page 4072 show how varied these voice pictures may be. Some will come like flowers, others like ferns, and others, again, like trees. The science of voice pictures is explained on page 4917. If we wish to get even more delicately detailed designs than the fine sand produces, we may try lycopodium powder, a fine yellow powder that is the seed of the plants called lycopodiums. This is to be obtained at the drug store, where also we may buy glycerine of various colours. The druggist will colour the glycerine for us according to our order.

In place of the paper funnel inserted in the end of the handle of the saucepan, we can, if we like, get a penny tin funnel, knock the narrow tube off, and have the wide funnel part soldered into the handle. This will make a stronger and more permanent instrument. The whole apparatus will cost at the outside only a few cents, and certainly the results that are to be obtained from it are very striking and astonishing.

MEASURING THE HEIGHT OF A TREE

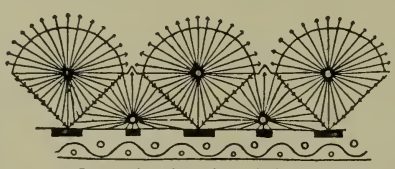
There is a very simple way of measuring the height of a tree, which may be in a field or a park, and which it is impossible for us to measure by climbing or in any direct way. Suppose, for instance, that we wish to find out the height of the apple-tree, A B, in the picture. We first of all go to where the tree is standing and measure a distance of, say, 30 feet from it, in a straight line, marking the spot that is 30 feet from the tree. Then we take a stick, C D, of any convenient length — a fairly straight branch of a tree will do admirably—and stand this upright in the ground at the spot we have previously marked. Let us suppose that the stick we are using is 4 feet in height. We now walk farther away from the tree in the same straight line as when we measured off the distance of 30 feet. We go from the tree until we come to a point E, where, with our head on the ground, we see the top of the stick and the top of the tree in the same straight line—that is, the top of the stick just covers the highest part of the tree. We now have two imaginary triangles, as shown in the picture, and the proportion of the side C D to the side C E, in the smaller triangle C D E, is exactly the same as the proportion of the side B A to the side B E, in the larger triangle B A E. It is clear from this that every schoolboy or schoolgirl can work out the height of the tree. Suppose that the line C E is 6 feet. We know that the stick is 4 feet high and the length B E 36 feet. From these measurements we have the simple proportion sum 6 is to 4 as 36 is to B A. We multiply 36 by 4, making 144, and divide by 6, which gives us 24 feet as the height of the tree. Church steeples and other buildings can, of course, be measured in the same way. The advantage of this method of measuring a tree or building over that described on page 1927 is that this can be done in dull as well as in sunshiny weather.



An easy way of measuring a tree

A NIGHTDRESS CASE FOR A GIRL

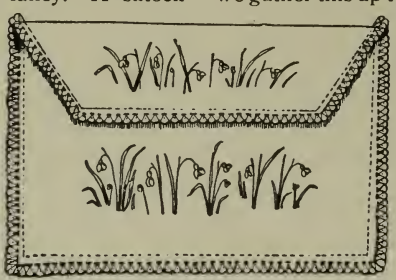
THERE are many materials which might be used for making a nightdress case—white linen, holland, huckaback, muslin, lace, crochet-work, canvas ; in fact, so long as it is washable, durable, and dainty, a material is not far to seek. It is well to choose for embroidering it a thread whose colour will not run while being washed. Suppose we choose a plain white muslin and embroider it with white mallard floss, filoselle, or twisted embroidery at 5c. a skein. The muslin may be bought from 30c. a yard, but it is advisable to get a good one which will wash well. though it may cost a few cents more.



2. Lace showing threaded ribbon

1. Satin stitch for snowdrop

We shall want a piece of material for the lining, either pink, blue, or green, whichever colour we fancy. A sateen may be bought at 25c. a yard with a width of 31 inches, or a coloured linen would be suitable. We will make the case envelope shape, say, about 16 inches by 12 inches, and if we decide that that is a suitable size for the folded garment intended for it, we yet have to allow an addition to the width for the flap, say, five inches more. A pretty edging for the case is a strong lace, containing large holes at intervals through which can be threaded a narrow ribbon. We shall need about three yards of it for our purpose.



3. Nightdress case with a snowdrop pattern

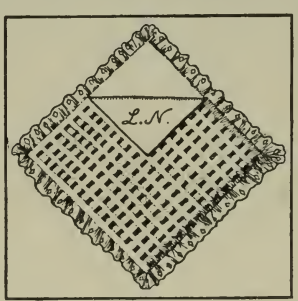
Having collected the materials, we cut the muslin and the lining the same size, and next have to decide on the embroidery design. As we are going to work in white, to avoid any possibility of the colour running in washing, suitable designs would be snowdrops, white heather, or white harebells. It is well, in choosing a design, to consider the shape and size of the leaves. With a thin material like muslin we do not want a large leaf which will cover much of the surface and entail risk of puckering. Suppose, then, we design something for our material, and for this we cannot do better than go to Nature for an idea, and draw snowdrops, as in picture 3. Failing this, we must get a transfer pattern and use it as shown on page 1507 and elsewhere. We will work the blossoms of the snowdrop in satin stitch across the sepals downwards, and in the same way cover the little green ball from which they grow, as shown in picture 1. Now we work the leaves. These can be done in long stem stitch, as shown on page 2133. They are simple enough to do if one keeps a blade of grass in mind.

White work is always dainty, and easily soils, so it is well to wrap it in blue tissue-paper, and to keep the part not being worked in this for protection. It should not rest on a dark tablecloth or stuff dress.

When we have finished the design, we fold the coloured lining and make a case of it separately from the muslin one, taking care, however, that it fits into it nicely. We then fasten it to the muslin case at the corners on the inside. It is just as well not to sew the lining in all round, so that it can be washed apart from the case when necessary.

We can make a lace frill by passing a running stitch along the inner edge of the lace ; we gather this up to the required length round the case, except at the fold, and carry it round the edge of the flap. Having stitched this on, we thread a bodkin with the pink coloured ribbon and run it in and out of the large holes in the lace, taking care to do this regularly, so that the same amount of ribbon is always visible each time on the outside, as in picture 2. Small pearl buttons and cord loops may be used to fasten the flaps down if desired.

The envelope shape is a great favourite because of its compactness and neatness, but the square is also popular, and it has the merit of being simple to make. Two squares are cut, with lining of the same size. They are joined together along two of the sides, and the other two are left open for the insertion of the garment. The upper corner is turned down and either stitched or folded over, as shown in picture 4. Such a case looks well made of coarse lace threaded with a narrow coloured ribbon. The monogram can be worked on the flap, and a lace frill will finish off the case, which looks not unlike a large handkerchief sachet. A complete set—nightdress case, comb bag, and handkerchief sachet—might all be worked in the same way, with a turned-down corner, embroidered with the monogram.



4. Square nightdress case

Huckaback is often used for nightdress cases. It has much to recommend it, especially the ease with which various embroidery stitches can be worked on its pattern. Canvas worked in cross stitch, is also popular.

THE NEXT THINGS TO MAKE AND DO ARE ON PAGE 5351

A GENERAL VIEW OF A GOLD MINE

THE EARTH'S HIDDEN TREASURE

CONTINUED FROM PAGE 5120

"As good as gold," we say when we wish to speak in terms of high praise. We can think of no substance given to us as more valuable than gold. With gold we make the king's crown, and with gold we make the money which keeps the nation over which he rules. Gold will buy anything which is to be sold, because all nations have from the very earliest ages regarded it as the most precious of metals. The possession of gold makes the meanest man powerful; the lack of gold may make a great man weak. By the aid of gold we can do enormous good; by the misuse of gold we may do enormous harm. Men sacrifice their lives in the honest attempt to get gold; men commit grave crimes in the dishonest attempt to get it.

What is this all-powerful metal? Where does it come from? It is a metal dug out of the earth, just as lead, and iron, and tin are. For ages upon ages men called alchemists tried to make this metal, which a child may find in the soil. They spent their own fortunes and the fortunes of other people, and ruined their lives and died heartbroken or mad, in the hopeless attempt to convert less valuable metals into gold. Yet gold was to be had in abundance in the soil of nearly every country. It had been hidden in the earth by Nature, a buried treasure, and may be found by any diligent seeker, or stumbled upon by the fortunate. We find gold in rivers, in dry land where once rivers ran, and in rocks.

It is not confined to Australia, or to California, or to Africa. We have gold in the rocks of North and South America, and more in the rocks of Alaska. Some day we may find great deposits of gold in Wales. Great quantities of gold have been dug from Welsh rocks in long-past days, and men who understand the subject think that, in course of time, still greater deposits may yet be discovered.

We know where gold is to be discovered; we know of what gold is composed; we know that it is, like iron, and lead, and tin, one of Nature's precious gifts to man. But how it came into the soil and rocks—how it was formed—we do not know. We find gold embedded in rocks which were created in the earth's hot interior, and feel disposed to say, "Oh, all gold has been formed in the fiery heat of the earth's internal furnace." But that will not do. We find gold also in great rocks which have been formed by the seas depositing mass upon mass of sediment.

There is gold floating in the seas around the American coast to-day. Though the work is not very profitable, men make a living by extracting the gold from the waves which wash the

shores of part of Australia. Gold is found in the sands of some of our rivers, and in the water of hot mineral springs. So we cannot say with certainty whether gold came originally from the inside of the earth or from the waters which cover the greater part of the world. Probably some of it comes from the earth, and some from the waters. But, whatever its source, there it is, Nature's surprise-packet for man, a free gift to the lucky and the industrious.

We learn much of the past history of the world in our quest of this rich gift of Nature to man. We find it in the beds of streams and rivers which run far from their original course. It has been washed there, along with masses of material of what once were mountains, worn down by rain, and wind, and frost, and heat. The bulk of the material has been borne away, but gold, being seven times as heavy as the material in which it is contained, has sunk into the beds of the rivers, and remained to be eagerly sought and found by men centuries and centuries after it last moved.

Then we find gold in dry land, where once a river was. Big nuggets are discovered in these places. One, called the "Welcome Nugget," weighing nearly 185 pounds, and worth more than $50,000, was discovered over fifty years ago in this way by poor men seeking fortune in South Australia. No such masses of gold as this are found in the rocks. There it is found in veins, and the rocks have to be blasted and crushed to release it.

The strange thing is that gold which has been carried by water in past ages may be found on hill-tops, far from any river. Ages ago, the river carrying the ruins of still older hills, gold and all, flowed over newer hills, cut down through them, formed a valley, and wore away a course at the foot of the hills, leaving the gold to become embedded in the rocks crowning the peaks, which the water left unhurt.

And then, with the progress of the ages, the rivers have carved entirely new courses for themselves, so that they run now at right angles to their old beds. The search for gold has led to the unfolding of the earth's history which these chapters from the past reveal so clearly. We do not know where Solomon got his gold, but we know that in ancient days great quantities of gold were used, and we find gold on the coffins of Egyptians buried 400 or 500 years before the Romans — who were great seekers for gold— first went to England. To the ancients it was the most precious of metals, because, to them, the most rare of all. The truth is that gold is not more scarce than copper, tin, and lead; and is *more plentiful* than nickel, cobalt, platinum, and other rare metals. But it has special values. A little of it goes a very long way—in working, just as in spending. A single grain of gold can be beaten into a gold leaf fifty-six inches square, and the gold which the gilders use, called gold leaf, is so thin that 280,000 sheets of it, laid one above another, measure only an inch in height. Pure gold is nearly as soft as lead, yet a grain of it can be drawn into a wire 500 feet long; while gold wire only sixty-five thousandths of an inch thick will actually hold up a weight of no less than 150 pounds.

A wonderful metal is this gold, which Nature has stored for us so carefully in the rocks, and soil, and sea, and river-beds of practically all countries.

A MAN SEARCHING FOR GOLD

WASHING OUT THE GOLD FROM THE SOIL

Gold is found in nearly every part of the world, and it is estimated that during the last four centuries gold worth nearly ten thousand million dollars has been obtained from the earth. Some has been dug out of mines and some washed out of the soil. The simplest way of getting gold is shown here. One digger is washing the gold-bearing soil in a pan, so that the heavy grains of gold may sink and be collected, while another miner is washing out the gold in a "cradle." The rough wooden trough is called a sluice-box, and is for washing gold on a larger scale.

The washing of the gold from the surface-soil in which it is found is now done by machinery and is called piping, or hydraulicking. Great jets of water are played upon the soil, as shown in this picture, and the water washes the earth or gravel away, leaving the gold grains behind. Much gold, however, is washed away and wasted by this process. Some of these surface goldfields are very rich. In three years, the Californian goldfields produced gold worth 180 million dollars, and in an equal period the Australian fields produced no less than 300 millions.

AN OPEN WORKING AND A DEEP MINE

Besides being found very near the surface, where it can be washed out, as we see on page 5299, and deep down so that a shaft has to be sunk, gold is also found a few feet below the surface, as shown here, when it is known as an open working. It is interesting to realise that many towns in South Africa, America, Australia, and New Zealand would never have been in existence to-day but for the discovery of gold in the districts where they have been built.

It has been estimated that from the time when gold was first discovered in South Africa, until the time when it shall all have been taken out of the earth, the total value of precious metal extracted will be about 75 hundred million dollars. Most of this will have come from underground workings like the one we see here, and in years to come this vast mining district will be like a giant honeycomb. Some workings are a mile below the surface.

WHAT THE TOP OF A GOLD MINE IS LIKE

The gold-bearing soil is really gold ore that in the course of centuries has been broken up by the weather. When the gold is all washed out of this, if the rock below has veins of gold or contains rich ore, mines are sunk and the ore is brought to the surface This picture shows us the great works built at the surface of a gold mine.

The tower-like structure built over the shaft of a gold mine contains the machinery for lowering the miners and raising the ore. When the ore is brought to the surface it is crushed, and then the gold is washed out.

In this picture of the top of a South African gold mine, we see the rush of water from the works, where it has been used in separating the gold from the crushed mineral. A good water supply is essential in gold-mining.

This is another view of the works at the top of a large gold mine. Very large nuggets of gold are never found in the veins of mines, but only in surface beds, and some think that here in the course of ages they have grown large by gradually attaching to themselves smaller fragments. The largest nugget ever found was the Welcome Nugget, discovered in 1858 at Ballarat, in Australia. It weighed 2,217 ounces, and was sold for $52,000.

THE MEN WHO DIG FOR THE GOLD

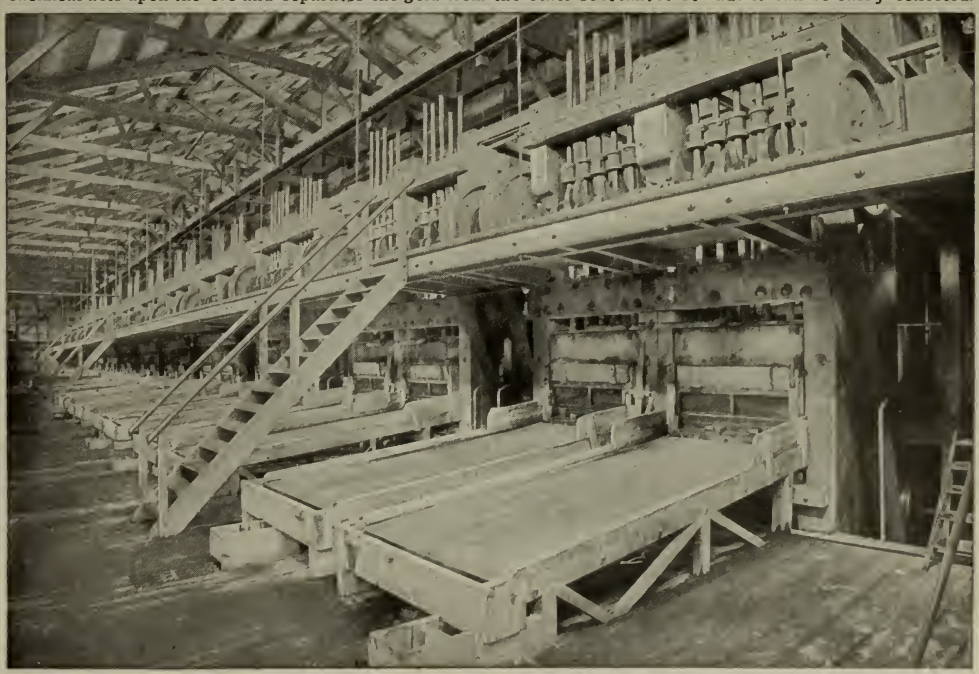
Here we see the little homes, or bungalows, where the engineers and other white men employed at a big gold mine live. These bungalows are strongly built. When, however, gold is first discovered in a new district, miles away from any houses, the miners who rush to the spot have to sleep in very rough sheds or in the open air.

In the South African gold mines nearly all the digging underground is done by Kaffirs. Although, as we can see from the photograph, they are mostly grown up, they are always called "boys" by the white men in authority over them, whatever age they may be. These black men wear very scanty clothing when working in the mines, which are very hot.

The black men, or Kaffir "boys," all live in a place by themselves, which is called a compound. The houses are built in the form of a square or oblong, while the space in the centre is left open, as we see here. Many thousands of Kaffir boys are employed in digging for gold in South Africa, and, when properly looked after, they make good workmen.

SEPARATING THE GOLD FROM THE ORE

Nearly twenty years ago two men invented a new process for obtaining the gold from minerals in which there were only very small quantities, and this process is now used in nearly all the South African mines. It is known as the cyanide process. The finely crushed ores and other materials are put into large vats, like the ones seen in this picture, with a poisonous chemical called potassium cyanide, which is used a great deal in photography. The chemical acts upon the ore and separates the gold from the other substances so that it can be easily collected.



The rock containing the gold is very hard as it comes from the mine, and after being crushed into small pieces it is reduced to the finest powder by machines called stamps. Here we see some of these stamping-machines. Iron hammers strike the ore with great force and crush it. The powder is then passed through a fine sieve and the gold collected. The hammers weigh nearly half a ton each, and strike ninety blows a minute.

THE GOLD LEAVES THE MINE FOR THE MINT

More than $150,000,000 worth of gold is now produced from the South African gold mines in a year, and to obtain this from the hard ore very expensive machinery is needed. In this picture we see what are known as precipitating vats, in which, by a chemical process, the gold is separated and collected. Of course, there are many other operations which the ore has to go through before the gold is actually set free and ready for use.

Here we see the smelting-room of a mine. Smelting, which simply means melting, is another method of extracting the gold from the ore that contains it.

This picture shows the chemists of a gold mine assaying, or discovering by chemical tests, the proportion of gold that exists in a particular kind of ore

When the gold leaves the mine for the Mint it often starts on its journey in mule wagons. The amount of gold found in mines and goldfields all over the world each year is worth about $440,000,000, and more than half of this amount is obtained in the British Empire, a fact which has partly helped to make England such a very rich country.

The photographs on these pages are by H. W. Nicholls, Underwood & Underwood, London, and the Consolidated Gold Fields of South Africa

THE NEXT STORY OF FAMILIAR THINGS BEGINS ON PAGE 5371.

THE STORIES OF VICTOR HUGO

CONTINUED FROM PAGE 5232.

No poet ever loved children more than the great Frenchman, Victor Hugo. One of his most famous works, "The Art of Being a Grandfather," was written out of love for his pretty little granddaughter, Jeanne. Jeanne was charming, sprightly, and full of mischief, and her grandfather was her humble slave. A grave senator, coming to consult the poet on some matter of state, found him crawling about the room, with Jeanne and her little brother Georges riding on his back.

"Now, grandpapa," Jeanne said, when she was tired of play, "sit down and tell us a nice story."

"It is very difficult to make up stories," grandpapa replied.

"Not for you," said Jeanne, nestling up to him. "You have written lots of tales, but tell us a tale that isn't in your books, darling grandpapa." And Jeanne and Georges curled up cosily at his feet, and he began to relate the marvellous new story of

THE GOOD FLEA AND THE BAD KING

There was once a very wicked king who made all his people unhappy. But they could not send him away, because he was extremely rich, and kept a great army to protect himself.

Every morning he woke up even more wicked than he was the night before, and at last this came to the ears of a little flea, who was full of kind feelings. All fleas are not like this, but this flea had been well brought up. She never bit people except when she was really hungry, and even then she was careful not to hurt them.

"It would be a dangerous task to bring this king to his senses," said the little flea; "but still I will try."

That night, as the king was quietly going off to sleep, he felt something like the prick of a needle.

"Oh, what's that?" he groaned.

"A little flea who intends to correct you," was the answer.

"A flea? Just wait. I will see to this!"

Jumping furiously out of bed, the king shook all his bed-clothes. But he could not find the flea, and for a very good reason. She had hidden herself in his beard.

He went back to bed, thinking he had frightened her away. As soon as his head was on the pillow, out hopped the flea, and bit him again.

"You dare to return, you abominable little insect!" he cried. "You are scarcely as large as a grain of sand, and you attack the greatest king in the world!"

The flea did not trouble to reply, but went on biting him. The king did not get a wink of sleep all night, and he rose up next morning in a very bad humour. He had his palace cleaned out from top to bottom, and twenty learned men

with great microscopes examined his bedroom and everything in it. But they did not discover the flea, as she was hidden under the collar of the coat that the king was wearing. That evening the king went to bed very early, as he felt he must have a good sleep.

"Who's that?" he shrieked, feeling a fierce bite.

"The flea!"

"What do you want?"

"I want you to obey me, and make your people happy."

"Where are my soldiers? Where are my generals, my Ministers?" screamed the king. "Tell them to come at once!"

In they all rushed to the royal bedroom. They pulled the bed to pieces, they stripped the paper from the walls, they tore up the floor, but the little flea nestled safely in the king's hair. He ran into another room, and tried to sleep there, but the flea skipped out and bit him, and kept him awake. In the morning the furious king issued a proclamation against all fleas, in which he commanded his subjects to exterminate them with the utmost speed. But he could not escape from the valiant little insect that was attacking him. His own body became black and blue with bruises from the blows he struck in a vain attempt to crush his tiny tormentor. He grew thin and white with sleeplessness, and he would certainly have died if he had not at last agreed to obey the flea.

THE LEARNED MEN EXAMINED THE ROOM

"I give in," he moaned, as she again began to bite him. "I will do whatever you want. What is it?"

"You must make your people happy," said the flea.

"How shall I do that?" asked the king.

"By leaving the country at once," said the flea.

"Can I take some of my wealth with me?" the king humbly asked.

"No!" exclaimed the flea.

But the little flea was not too severe. he allowed the wicked king to fill his pockets with gold before he went away, and the people formed themselves into a republic, and governed themselves, and became very, very happy indeed.

Both Jeanne and Georges were greatly amused by this funny story, because grandpapa pretended to be the wicked king that was being tormented by the good little flea. He rolled about in his chair with such comical movements that the children shook with laughter. Pleased with the effect he had made, Victor Hugo went on to tell the very wonderful tale about

THE UGLY DOG THAT BECAME AN ANGEL

THERE was a very good dog, whose name I can't remember, but he was an excellent dog. I should have liked to be his friend. Unhappily, he was very ugly, and he seldom washed himself. This was really the fault of his master, a wicked little boy, who used to ill-treat him. One day this boy went to a deep lake to play at ducks and drakes. You know the game? He had a pocketful of stones, and he threw them along the surface of the lake, and tried to make them touch the water three or four times. The dog sat at a distance, watching him. All of a sudden, splash!—the boy slipped down the muddy edge of the lake, and sank. Just as he was drowning the dog jumped in after him, and, seizing him by the coat, brought him safely ashore. But the wicked boy was angry because the brave, good dog had torn his coat just a little in dragging him out of the water. So he sent the faithful animal into the lake again to fetch his cap, and then threw stones at him, and almost made him sink.

A hungry, fierce wolf saw what had happened. He thought that the poor dog would be glad to get rid of such a bad and ungrateful master. Creeping up, he whispered to the dog:

"Let me eat him up!"

But the dog pretended to be deaf in that ear. The wolf at last got tired of

talking, and sprang at the boy; but the good dog closed with him, and after a hard struggle he drove the wolf away. The wicked little boy was hiding behind a bush, holding a great stick in his hand.

The good dog ran up to him, full of the joy of victory, but the boy cried in an angry voice :

" Go away, you ugly thing ! Why did you frighten me by fighting with that dreadful wolf ? You quarrelsome brute ! "

And he beat the poor dog, and chased him away by throwing stones.

THE BOY WAS HIDING

But the poor dog still faithfully followed his wicked little master. The boy climbed into an orchard to steal some apples. He knew that the orchard belonged to a cruel farmer, who had no mercy on thieves ; but he thought that the man was away marketing. The wicked boy began picking the apples and pelting the poor dog with those that he found unripe. Suddenly the cruel farmer ran out with a gun, and pointed it at the wicked boy.

" Pay me at once for my apples," said the farmer, " or I shall shoot you ! "

The wicked little boy had not a penny in his pocket. Giving himself up for lost, he shrieked in terror :

" Help me, my dog ! Help me ! "

Dogs, you know, cannot climb up trees. But this wonderful dog could. He seemed to bounce up the trunk like an animal made out of indiarubber, and, gripping the branches with his teeth, he got on to his master and protected him just as the cruel farmer fired his gun. The shots entered the poor, brave dog's body. He turned his dying eyes toward the wicked little boy, to implore his help. But the boy was already a long way off. He was running away through the fields, like the thief that he was. But this is what the farmer saw with his own eyes. The smoke from the gun drifted round the dying dog, and seemed to transform him. The faithful creature was no longer dirty and ill-kept, but beautiful and shining with a glorious light. His face took on a heavenly expression, and lovely wings grew out of his back. There was a sound like thunder, and then the farmer saw the dog rise up in the air, and vanish above the highest clouds. There was another angel wanted in heaven that day, and no creature had been found anywhere on earth as good as the poor, ugly dog.

" What became of the wicked, wicked boy ? " said Jeanne, who had been boiling over with indignation at his treatment of the good dog.

" He continued to be wicked," said her grandfather, " but he was very cruelly punished for it. *Nobody ever loved him.*"

THE MAN WHO KNOCKED AT THE GATES

Long ago in India there lived a holy man. For seven years this good man performed many kind works. At the end of that time he mounted the three steps that took him to the doors of Paradise, and knocked loudly till he heard a voice. And the voice said :

" Who is it that knocks ? "

" It is your servant, Lord, who seeks entrance ! " replied the holy man.

But there was no answer, and the gates remained closed.

Then the man went away, and performed many other good deeds, and for seven years lived a beautiful life working for others. At the end of that time he once more mounted the three steps, and tapped loudly at the portals of heaven.

Again a voice cried out from within :

" Who is it that knocks ? "

" It is thy slave, O God ! " he replied.

But the doors never moved.

" Ah," thought the holy man, " I have been selfish. I must not think of myself. In future I will do good for its own sake."

So he went away, and for seven more long and weary years he strove to live a noble life, and his selfishness completely vanished. At the end of those seven years of toil he went up the three steps leading to Paradise, and knocked gently.

And he heard the voice, which said :

" Who knocks there ? "

And he answered :

" It is your child, my Father."

And the gates opened, and he walked in.

STORIES TOLD IN THE MIDDLE AGES

LITTLE TALES FROM A BOOK THAT SHAKESPEARE READ

The most famous story-book of the Middle Ages was a book written in Latin, called the "Gesta Romanorum," which means, "The Exploits of the Romans." The book received this name because many of the stories were told about real or imaginary emperors of Rome. There are about two hundred stories altogether, and most of them are weak in incident and dramatic power; but it was in the "Gesta Romanorum" that Chaucer, Shakespeare, and other famous poets found many of their plots. Here are some of the more interesting stories.

THE SON WHO DID HIS DUTY

A CERTAIN soldier went on a long journey, leaving his wife and son at home. In a distant land the soldier was made a prisoner, and kept in close confinement, but he was able to write to his wife and son telling them of his fate, and asking them to do all they possibly could to collect a sum of money to pay for his release.

The wife was so distressed at the sad news, and wept so much, that she became blind; and the son was then in great trouble, for he knew not what to do. He was anxious to fly to his father's help, but at the same time he could not bear the thought of leaving his blind mother alone while he was away.

After thinking over the matter for some time, he at last determined to go to release his father; but first of all he made careful arrangements for his mother to live among friends, and be properly cared for during his absence. Then he travelled to his imprisoned father, obtained his release, and the family were once again united and happy, and the mother gradually recovered her sight.

THE DOGS THAT BECAME FRIENDS

THERE was a king who had two greyhounds, and these were kept chained up at some distance from one another. But directly they were let loose they flew at each other, and began to fight most fiercely. The king consulted one of his wise men as to what could be done to make the dogs live together as friends.

"Take them into the forest," said the wise man, "and when you see a fierce wolf or a wild boar, let one of the dogs loose. The wild animal will attack it. But just as it is being overcome, let loose the other dog, which will fly at the boar or wolf, and the two dogs together will be more than a match for the wild animal." The king did this. A wolf appeared, and one dog was let loose. When its strength had nearly failed, the other was let loose, and the fierce wolf was slain. The first dog was so grateful to its companion for saving its life that ever after the two animals were faithful friends.

ALEXANDER AND THE PIRATE

A SEAMAN named Diomedes for a long time sailed the seas in a galley, attacking the shipping, plundering the cargoes, and sinking the vessels. At last he was captured and brought before Alexander the Great, who asked angrily how he dared to trouble the seas as he had done.

"Sire," said he, "ask rather how you dare to trouble the earth. I am master of only a single galley, and do but little harm, while you are master of great fleets, and carry desolation and war. Yet I am called a robber, and you are a king and conqueror. Did fortune but change, and I became more successful while you became less successful, our positions might be reversed."

This argument so struck the king that he made the pirate a wealthy prince, on condition that he should give up his life of robbery and become an honest man.

THE CONQUEROR'S TRIUMPH

A CERTAIN king, after a great victory, appointed three honours for his successful general. He decreed that the victor should be greeted with loud hurrahs, that he should enter the capital in a triumphal car drawn by four white horses, and that the captives should follow the conqueror's chariot, bound hand and foot.

The general was delighted at hearing this. But when the time came for the honours to be enjoyed, he found that the emperor, in order to keep him humble amid success, had appointed also three annoyances which would accompany the honours.

First of all, a slave rode by his side in the triumphal chariot, to remind him that even the poorest and least of mankind could attain to a position such as his; in the second place, the slave struck him a blow whenever the people cheered, so that his pride might be checked; and, in the third place, the

people were allowed free licence to shout the most insulting remarks while the victor enjoyed his triumph, so that he might be reminded of his weak points.

THE GUESTS AT THE FEAST

A GREAT king made a feast, and invited everyone to it. He sent out messengers to all the cities and towns in his kingdom, asking the people to come, and promising not only food, but wealth.

In one town there was a strong, robust man, who, unfortunately, was blind; and he loudly bemoaned the fact that his affliction would prevent him accepting the king's invitation. But presently he heard that in the same town was a lame man, who was also grieving that he would be unable to go to the feast.

The blind man and the lame man, therefore, came to an arrangement by which the blind man would carry the lame man to the feast, the lame man directing him. So the man who had sight but could not walk guided the man who could walk but could not see, and the two went together to the king's feast.

HOWLEGLASS, THE MERRY JESTER

The "History of Howleglass" is a famous German book of stories which was written in the Middle Ages, and was very popular in England in the reign of Queen Elizabeth. Howleglass is a merry rascal who travels about a great deal, and wherever he goes he plays pranks that makes people very angry at first, but afterwards cause them great amusement. The following are some of his adventures:

THE DINNER AT THE CASTLE

HOWLEGLASS at one time enlisted in the service of the Count of Ambal, whose castle was surrounded by enemies. Howleglass was placed in the watch-tower, and told to keep a sharp look-out and to blow a horn if he saw the enemy approaching.

Shortly afterwards he heard the count and his chief officers go into the great hall to dinner, and the smell of the dishes was too much for Howleglass. So he gave a great blast on his horn, and while the count and all his men ran off in great alarm to their posts to withstand the enemy, Howleglass rushed down and ate his fill of the victuals provided.

THE THREE GREAT QUESTIONS

ARRIVING at Prague, Howleglass posted a notice on the doors of the churches to the effect that he would answer any questions that might be asked of him, however difficult they might be. He was taken to the university and questioned by the rector before all the students, who had gathered to hear the visitor.

"How much water is there in the sea?" asked the rector.

"Stop the tides," said Howleglass, "and I will measure it for you."

The rector said he was unable to do that, and asked a second question.

"How many days have passed away since Adam was alive?" said he.

"Seven," answered Howleglass without hesitation, "for when seven have passed, seven begin again, and so it goes on to the end of time."

"Where is the centre of the world?" asked the rector.

"Why, this house, to be sure," replied Howleglass. "Measure the world with a long cord and you will find I am right to an inch."

"How far is it from earth to heaven?" said the rector.

"Very near indeed," answered Howleglass, "for when we pray ever so low on earth, it is surely heard in heaven."

"But how large is heaven?" questioned the rector.

"Just twenty thousand leagues," replied Howleglass; "and if you doubt me, go and measure it, including the sun and moon and stars."

At this point the rector had to own that he could ask no question to which Howleglass had not an excellent answer.

THE WONDERFUL HORSE

HOWLEGLASS, on his travels, arrived at the city of Halberstadt, and lodged at the best inn he could find. Soon his money was exhausted, and in order to get more he asked the town-crier to advertise a wonderful show that would be open to the people on the following day.

"Come," he said, "and see the strangest horse that ever lived. Its tail is where its head should be."

The people flocked in hundreds to see this strange animal, but on entering the stable where it was kept they found an ordinary horse with its tail tied fast to the manger.

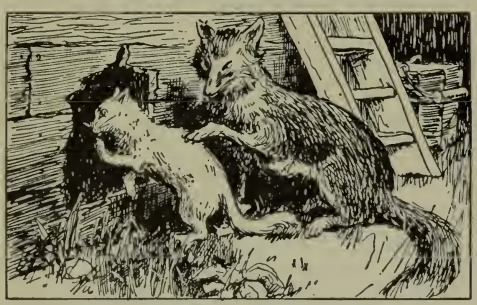
The folk could not help laughing at the way they had been hoaxed, and Howleglass made them promise as they left that they would not reveal the secret to those who had yet to come in.

THE ADVENTURES OF REYNARD THE FOX

Nobody knows who wrote "The Adventures of Reynard the Fox." They are about a thousand years old, and are found among the ancient literature of many countries. Reynard is an artful knave, who deserves to be punished for all his evil deeds, but somehow manages to escape every time. The stories were written as parables—that is to say, as stories with an inner meaning—and they were meant to point out the evils of rulers and priests in the days when men dared not write openly of such things.

REYNARD IS SUMMONED TO COURT

SIR TIBERT the Cat was sent by King Lion to summon Reynard the Fox to appear at court, there to answer for all his offences. At first the



REYNARD SHOWED SIR TIBERT THE HOLE

cat did not want to go for fear that some evil should overtake him, but at last he was persuaded, and he set out.

When he arrived at Reynard's castle, the fox promised to return with him to the court. "But," said the fox, "you must remain for the night, and to-morrow we will travel together." Sir Tibert agreed to this. Then the fox began to lay the table for a meal, but all he could provide was honey.

"That is food I care nothing about," said the cat. "Have you not a mouse?"

"Oh," replied Reynard, "come with me to the priest's barn, it is full of mice!"

So the two set out, and presently they came to the barn.

"There is the entrance," said the fox, pointing to the hole by which he had himself entered the night before and stolen a good fat hen.

Now, the priest had set a trap near the hole, inside the barn, and when Sir Tibert crept in he was caught in the trap. His mewing soon brought out the priest, who, supposing him to be Reynard, began striking out with a stick. Thereupon Sir Tibert seized the priest's leg with his teeth. This gave the worthy man something to think about, and while he and his wife were attending to the wound, Sir Tibert bit through the cord that held him and made off. All this time Reynard was hiding in the bushes close by, and laughing most heartily.

REYNARD TELLS OF A TREASURE

WHEN at last Reynard the Fox was brought to the court, so many witnesses appeared against him that he was found guilty and sentenced to death. Just before his execution, he asked that he might make a confession of all his misdeeds, for he now felt very penitent; and in the course of this confession he said something that made the king listen very carefully.

"My lord the king," he declared, "in Flanders there is a dense wood by a river, and in it I have hidden a great treasure—money, jewels, precious stones—and I want you to get this treasure; then perhaps you will remember your devoted servant, Reynard."

The animals who had accused the fox now began to feel very nervous, for King Lion, having learnt exactly where the treasure was supposed to be hidden, forgave the fox and made him a noble.

"Hear, all you knights and gentlemen," said the king. "Sir Reynard is now one of the chief officers of my court, and I do charge you, upon pain of death, to show him the greatest reverence at all times and in all places." Reynard

"WHERE IS KAYWARD?" ASKED BELLIN

now asked permission to make a pilgrimage to Rome, and he set out, accompanied by his enemies, the hare and the ram, who were now his humble, though unwilling, attendants.

Soon the party arrived at Reynard's house, and the fox asked Bellin the Ram to keep guard outside, while Kayward the Hare went into the house to see Reynard's meeting with his family.

Once inside, it was not long before the hare was killed and eaten.

Then the fox came out, and giving a bag to the ram, asked him to take it to the king.

"Where is Kayward?" asked Bellin.

"Oh, he is talking with his aunt, and wants you to go on, as he will soon overtake you."

The ram carried the bag to the king.

"Sire," said he, "this is a present from Sir Reynard, who rested for a few hours at his castle before going on to Rome."

"Open the bag," said the king, "and show the gift of the noble Sir Reynard."

The bag was opened, and out fell the head of poor Kayward the Hare.

"Alas!" said the king, "unhappy monarch that I am ever to have given credit to a sly and traitorous fox."

REYNARD AGAIN ESCAPES

THE day after Bellin the Ram had brought the head of Kayward the Hare to the king from Reynard, Laprel the Coney came into the court weeping and crying.

"O king! deliver your subjects from the wicked attacks of Reynard the Fox. I was passing his castle yesterday, and he came out telling his beads so devoutly that, instead of hastening away, I saluted him very humbly, and immediately he gave me such a terrible blow with his paw that I was nearly killed."

THE ROOK BENT TO SEE IF HE WAS BREATHING

At this moment in came Corbant the Rook in a great state of excitement.

"Oh, my lord, hear me!" he cried. "I was on the common this morning, when I saw Reynard the Fox lying apparently dead and stiff on his back. My wife went and put her head to his mouth to see whether he was breathing, when suddenly the wicked creature snapped at her and bit her head right off. Then he made a dash for me, and I only just managed to escape by mounting into the air, and from my place above I saw him eat up my dearly beloved wife."

The king was furious. Reynard was brought before him for trial a second time, sentenced to death once more, but again he escaped by talking of the hidden treasure and by promising to go in search of it himself for the king.

REYNARD'S BATTLE WITH THE WOLF

AFTER King Lion had pardoned Reynard for the second time, Isengrim the Wolf made all kinds of accusations against him, and it was decided that the two animals should fight a duel to decide which of them was in the right.

REYNARD SMOTE THE WOLF WITH HIS TAIL

The fox knew that it was only by trickery he could win, and he sought the aid of a friend of his, the ape's wife.

"Shave all the hair off your body, from head to tail," said she, "and cover yourself with oil."

This Sir Reynard did, and then in the presence of the king the fight began.

Every time that Isengrim tried to seize Reynard, the fox slipped away, his oily body being too slippery for the wolf to get a grip. Then the fox would smite his enemy in the face with his tail, and before he had recovered from the blow he would throw up in his eyes clouds of dust. This nearly blinded the wolf, and gave the fox an opportunity to chastise him. So the fight went on, until the wolf got the fox down and had one of Reynard's paws in his mouth.

Reynard was now in sore straits, but with the other paw he pinched the wolf, and when Isengrim opened his mouth to howl, Reynard snatched out his paw. Then the wolf fainted, and Reynard, laughing triumphantly, dragged him round the arena by his hind legs.

The king now pardoned the fox for everything he had ever done, and made him Lord Chancellor of his kingdom, ordering that all the other creatures should pay him the greatest honour.

STORIES TOLD IN THE OLD ENGLISH SCHOOLS

THE first book on education ever written and printed in English was Sir Thomas Elyot's "Governour," published in 1531. Considering the period when it was written, it is a remarkable book, for its enlightened views are worthy of the twentieth century; and much that is done in the education of children to-day was first suggested by its author. The book is full of interesting stories which used to be told to the boys and girls of the old English schools to illustrate their lessons; and some of these stories are given here.

THE MASTER AND HIS SCHOLARS

WHEN Dionysius, King of Sicily, was exiled by his people, he went to Italy and set up a school for boys, to whom he taught grammar and other subjects. His enemies laughed at him for this, declaring that it was quite beneath the dignity of one who had occupied a throne to keep a school. But he replied that, though he had been turned out of Sicily, he was still a king, for he had authority over his scholars.

His enemies then asked him what good Plato's philosophy was to him in his trouble, for he had studied it deeply.

"Ah," replied he, "it enables me to bear misfortune with patience!"

So moved were his former subjects by his fortitude that they recalled him to the throne—a dignity which he would probably never have regained by the sword.

THE TWO FRIENDS

ORESTES and Pilades were two youths who were remarkably alike in appearance, and remarkably fond of each other. One day Orestes was seized by command of a tyrant, who hated him deeply, and who had determined to put him to death. But Pilades accompanied his friend into the presence of the tyrant, and, in order to save the life of Orestes, loudly declared that he was the man the tyrant sought.

The real Orestes, however, maintained that he was the man who was wanted, and so perplexed was the tyrant that he knew not which of the two to condemn. At last, when the youths continued striving to receive condemnation in order that each might save the other, the tyrant's heart was softened, and he set them free.

THE CONQUEROR AND THE ARTIST

ALEXANDER THE GREAT, who conquered nearly all the world, one day went into the studio of an artist, and, while watching the man paint, spoke of drawing, and colour, and other subjects about which he knew little or nothing.

At last the artist turned round, with a smile, and said to the king:

"Do you see, noble prince, how even the boy who is mixing my colours is laughing at you?"

Instead of getting angry the king accepted the rebuke, and ceased to talk glibly about what he did not understand.

THE TRAITOR WHO BECAME LOYAL

IT was once reported to King Philip, father of Alexander the Great, that a certain captain had been plotting against him, and the king was urged to have the man seized and shut up in prison or executed. But Philip declined to do this, in spite of the continued warnings of his courtiers and friends.

"If any part of my body was sick," said he, "should I cut it off and cast it away? Should I not rather do all I possibly could to heal it?"

He thereupon invited the traitorous captain to the palace, loaded him with gifts and honours, and in this way made him ashamed of his treason. The captain afterwards became one of the most loyal and most loving subjects of the king.

THE KING WHO WAS LOVED

CRŒSUS, the rich king, was captured by Cyrus, King of Persia, and one day, after seeing the liberality of Cyrus, he said:

"Surely if you give away like this you must become very poor, whereas if you keep your wealth you would soon have great riches."

"How much do you suppose I should have now," asked Cyrus, "if, during all my reign, I had kept everything and given nothing?"

Crœsus named an immense sum.

"Well," said Cyrus, "I will send round to my friends and subjects, and tell them that I need money for some object, and you shall see the result."

After the messengers of Cyrus had been round, the king took Crœsus to see the gifts they had sent. Crœsus was amazed, for there stood a great heap of gold, of far greater value than the sum he had named as being what Cyrus might have saved had he been a miser.

"If I had hoarded and guarded my wealth," said Cyrus, "I should be envied and hated by my people; whereas I am loved and trusted by my people, and can in a moment have more gold than ever I could have saved in many years."

THE SOLDIER AND HIS JUDGE

ONCE when King Philip, father of Alexander the Great, was trying a prisoner, he fell asleep; and then, waking suddenly, he at once gave judgment against him. But the soldier cried out:

"King Philip, I appeal against your sentence!"

"To whom do you appeal?" said the king angrily.

"I appeal from Philip asleep to Philip awake," answered the soldier, facing his judge nobly.

The king was impressed by this reply, and, feeling the justice of the man's appeal, he went thoroughly into the case, found that he had greatly wronged the soldier, and at once had him set free.

THE BATTLE WITH THE LION

AT one time, when there was no battle in progress, Alexander the Great became tired of inactivity, and, ordering a fierce lion to be brought into his presence, he fought it single-handed, and, after a terrible struggle, finally slew it.

A courtier, who disapproved of the king risking his life thus needlessly, being asked his opinion of the battle, replied in these words of great wisdom:

"I wish with all my soul that your Majesty might fight with a lion for some great empire!"

By this answer the courtier, while praising the king's bravery, at the same time hinted that only for a great cause, and not for mere pride of victory, should he thus risk his precious life, which was of such importance to his people.

HOW ALEXANDER CROSSED THE RIVER

WHEN Alexander the Great was going to war against the Indian King Porus, he came with his army to a very wide river, which had to be crossed. The horsemen went in, and the animals were soon up to their necks in water, so that it was impossible for the foot-soldiers to walk through the river by a ford.

The men could not swim, and were afraid to go into the water. Seeing this, Alexander, who himself could not swim, wrung his hands, exclaiming:

"Oh, most unhappy that I am, never to have learnt to swim!"

Then, seizing a shield from a soldier and throwing it into the river, he stepped upon it, and, balancing himself with his spear, crossed to the other side, using the shield as a raft. This encouraged the foot-soldiers, and in one way and another they all managed to cross the river.

THE FARMER AND HIS DOG

A POOR farmer by the banks of the Nile had a good dog, which had to go hungry for some days because the farmer had no food in the house. There was a village across the river, where any dog that knew how to forage could manage to pick up a living. The farmer's dog was well acquainted with the place, as he had often gone there with his master in a boat. But swimming across the great stretch of water was dangerous, as the river was full of fierce crocodiles.

Being pressed by hunger, however, the dog finally risked it. He arrived at the village, but on the way he had two such narrow escapes that, for some time, he was afraid to swim back. Meanwhile, he found as much food as he wanted, and grew plump and fairly happy.

But being of an affectionate nature, the dog was troubled by his separation from his master, and his sadness made him as miserable as hunger had made him before. At last he resolved to return. But how could he get back safely? Sometimes a boat crossed the river, and he would then try to get into it. But the boatmen would not have that, and one day the dog stood howling by the riverside at a departing boat, when the crocodiles, attracted by his cries, came swimming to the spot, thinking, no doubt, that they could easily take him.

This seems to have suggested to the dog a clever plan of escape. As night began to fall he again came to the riverside, and stood howling with such a show of anguish that the crocodiles crowded once more to the spot, hoping to find an easy prey. But while they were peering about, the dog was tearing along the bushes by the bank.

Two hundred yards away he silently slipped into the river, and, having now a clear way before him, safe from the crocodiles, he swiftly swam back to his master's house. There he received a loving welcome and a good supper, for the farmer had now reaped and sold his corn, and he was very glad to find that his dog had not forgotten him.

THE BURIAL OF A CITY: By PLINY

One of the greatest calamities of ancient times was the utter destruction of the beautiful and flourishing Roman city of Pompeii, when, in the year 79, the slumbering volcano of Vesuvius burst forth in a terrible eruption and buried the splendid city in ashes. Within comparatively recent years the enterprise of the Italian Government has enabled a large part of the buried city to be unearthed, and to-day the traveller in Europe has no more fascinating sight than a walk through the ruined streets of Pompeii. At the time of the disaster two men famous in Roman history lived near the stricken town. These were Pliny the Elder and Pliny the Younger. The former was famous as a soldier and a scholar, and he was the intimate friend of the Emperor Vespasian. At the time of the eruption he was in command of the Roman fleet at Misenum, a naval station on the Bay of Naples. Eager to study at close hand the effect of the eruption, he ventured too near the scene, and so met his death. His nephew, Pliny the Younger, is famous for the many charming letters he wrote to his friends, and in one to the Roman historian Tacitus he described the destruction of Pompeii and the death of his uncle. It is from this letter that the following passages have been chosen.

THERE had been noticed, for many days before, a trembling of the earth, which did not alarm us much, as this is quite an ordinary occurrence in Campania, but it was so particularly violent that night that it not only shook, but overturned, as it would seem, everything about us.

Though it was now morning, the light was still exceedingly faint and doubtful; the buildings all around us tottered, and though we stood upon open ground, yet, as the place was narrow and confined, at a convenient distance from the houses, we stood still in the midst of a most dangerous and dreadful scene.

The chariots which we had ordered to be drawn out were so agitated backward and forward, though upon the most level ground, that we could not keep them steady even by supporting them with large stones. The sea seemed to roll back upon itself and to be driven from its banks by the convulsive motion of the earth; it is certain at least the shore was

THE TERRIBLE ERUPTION OF VESUVIUS THAT DESTROYED POMPEII AND HERCULANEUM

there was no remaining without imminent danger; we therefore resolved to quit the town.

A panic-stricken crowd followed us, and, as to a mind distracted with terror every suggestion seems more prudent than its own, pressed on us in dense array to drive us forward as we came out. Being considerably enlarged, and several sea animals were left upon it. On the other side a black and dreadful cloud, broken with rapid, zigzag flashes, revealed behind it variously shaped masses of flame, like sheet lightning, but much larger.

The ashes now began to fall upon us, though in no great quantity. I looked

back ; a dense, dark mist seemed to be following us, spreading itself over the country like a cloud. " Let us turn out of the high road," I said, " while we can still see, for fear that, should we fall in the road, we should be pressed to death by the crowds that are following us." We had scarcely sat down when night came upon us, not such as we have when the sky is cloudy, or when there is no moon, but that of a room when it is shut up and all the lights put out. You might hear the shrieks of women, the screams of children, and the shouts of men ; some calling for their children, others for their parents, others for their husbands, and seeking to recognise each other by the voices that replied ; one lamenting his own fate, another that of his family ; some wishing to die, from the very fear of dying ; some lifting their hands to the gods, but the greater part convinced that there were now no gods at all, and that the final night of which we have heard had come upon the world.

VESUVIUS AND THE CITY OF NAPLES

ness, and a heavy shower of ashes rained upon us, which we were obliged every now and then to stand up to shake off, otherwise we should certainly have been crushed and buried in the heap. I might boast that during the whole of this scene of horror not a sigh or expression of fear escaped me, had not my support been grounded in that miserable though mighty consolation that all mankind were involved in the same calamity, and that I was perishing with the world itself. At last this dreadful darkness was dissipated by degrees, like a cloud of smoke ; the real day returned, and even the sun shone out, though with a lurid light, as when an eclipse is coming on.

We returned to Misenum, where we refreshed ourselves as well as we could, and passed an anxious night between hope and fear, though, indeed, with a much larger share of the latter, for the earthquake still continued, while many frenzied persons ran up and down, heightening their own and their friends'

THE FIELDS OF LAVA ON THE SLOPES OF VESUVIUS, WITH THE OBSERVATORY ON THE LEFT

It now grew rather lighter, which we imagined to be rather the forerunner of an approaching burst of flames, as in truth it was, than the return of day ; however, the fire fell at a distance from us ; then again we were immersed in thick darkness, and a heavy shower of ashes rained upon us, which we were obliged every now and then to stand up to shake off, otherwise we should certainly have been crushed and buried in the heap. I might boast that during the whole of this scene of horror not a sigh or expression of fear escaped me, had not my support been grounded in that miserable though mighty consolation that all mankind were involved in the same calamity, and that I was perishing with the world itself. At last this dreadful darkness was dissipated by degrees, like a cloud of smoke ; the real day returned, and even the sun shone out, though with a lurid light, as when an eclipse is coming on.

We returned to Misenum, where we refreshed ourselves as well as we could, and passed an anxious night between hope and fear, though, indeed, with a much larger share of the latter, for the earthquake still continued, while many frenzied persons ran up and down, heightening their own and their friends' calamities by terrible predictions. However, my mother and I, notwithstanding the danger we had passed, and that which still threatened us, had no thoughts of leaving the place till we should receive some account from my uncle.

PROSERPINE, QUEEN OF THE UNDERWORLD

CERES was a good and a kindly spirit, and she taught men how to grow corn. She had a beautiful daughter named Proserpine, who was as beautiful as a flower.

One day, as Proserpine was plucking blossoms, the earth opened beside her, and out of it there came a chariot drawn by black horses, and in the chariot sat a spirit with a golden circlet round his head. He was Dis, the King of the Underworld, and he carried Proserpine away to his dark kingdom, and made her his Queen.

Ceres wandered about the earth in search of her daughter, and during her wanderings no corn grew, and all men were in great misery. But at last the Spirit of the Sun told her that Dis had carried away Proserpine to the Underworld. Dis then summoned a council of all the spirits. They decreed that if Proserpine had eaten nothing in the Underworld she still belonged to Ceres.

Now, Proserpine had been so unhappy with Dis that she had eaten no food. But, seeing a red pomegranate growing on a tree by a gloomy river, she had plucked it, because it reminded her of the flowers of earth. Dis thought that this gave him power to keep her for ever. But the spirits decided that Proserpine should stay with him only for three months in every year, and return for nine months to Ceres.

So every spring, when the young wheat rose from under the ground, Proserpine came up with the flowers.

THE LONELY OLD WOMAN OF MOROCCO

SOME time ago there was a poor woman in Morocco who had no children, and she felt very lonely. So she went to the wise man of her tribe and asked him where she could find some merry boys and girls to live with her. The wise man told her to fill a basket with some dates growing on a palm tree in her garden, and then leave the basket in her kitchen, and go to the church and pray.

The woman did so, and when she came back she found her house full of young men and maidens and children. So she became very happy with her new family. The young men went out to work and brought her much money, and the maidens kept house for her, and the children laughed and sang to her.

But one morning the children in their play upset a pail of milk in the kitchen, and this made the woman very angry, and she said :

" You miserable children of a tree ! I wish I had never had anything to do with you."

And she went out in a fury. When she returned, all the children of the tree were gone, and the house was lonely. The woman was now sorry. She went to the palm tree, and saw that all the fruit was growing again ; but when she put out her hand to gather the dates once more the dates turned into eyes and stared at her, and she ran away in terror and never went back to the garden again.

THE TIGER WOMAN OF THE JUNGLE

IN Burma there are two races of people. One race lives in villages and tills the ground ; the other race lives among wild beasts in the jungle on the hills.

One day a villager set out for the hills, where he found a beautiful hill-woman, whom he led to his village and married. For a time they lived happily together, and had a little baby girl. But the baby died, and the villager began to neglect his wife.

Coming home very late one night, he found his hut empty, and about it were the marks of a tigress's feet. He knew what had happened. His wife had changed into a tigress and gone back to the jungle. All his deep love for her returned, and he set out again for the hills, taking with him the clothes of his dead baby. He followed the tracks of the tigress until he came to a cave, and there he saw the eyes of the wild beast blazing in the darkness.

He was not afraid. He put down the baby's clothes at the mouth of the cave, and the tigress leaped out upon him. But when she saw the clothes of her little dead girl her heart was melted. Instead of killing the villager, she suddenly changed into a woman, flung her arms about his neck, and went back joyfully with him to their empty hut.

THE NEXT STORIES BEGIN ON PAGE 5341.

CHATTERTON'S LAST SLEEP IN A GARRET IN HOLBORN

CHATTERTON THE WONDERFUL BOY

HOW A BLUECOAT BOY DECEIVED THE WORLD

IT would be hard to find in all history another story so sad and so wonderful as that of Thomas Chatterton. Most boys of seventeen, if they are not going to a high school or a university, are just beginning to talk with their fathers and mothers about what calling they are to follow. But at seventeen and three-quarter years, poor Chatterton had lived his life, had done the work which was to make him for ever famous, and was dead, and buried in a pauper's grave.

This marvellous boy was born at Bristol on November 20, 1752; he died in a garret in Brook Street, Holborn, London, on August 24, 1770. No poet could have been more humbly born. His father was master of a charity school at Bristol, but died three months before the poet was born. Mrs. Chatterton taught a few scholars, but, to make a living, had also to take in sewing.

Nobody dreamed that Thomas was a genius. Up to seven years of age he was the dullest boy imaginable. He seemed quite unable to learn, and his poor mother, in her despair, thought he would grow into an idiot. But a strange chance brought out his latent talent. For two hundred years some member of the Chatterton family had been sexton at the St. Mary Redcliffe Church, Bristol. In the tower of the church was a room where there were old chests containing documents written centuries before.

One of these chests had been broken open. The lock had never been repaired, and the documents were scattered about the room. Chatterton's father, visiting his brother, the sexton, took some of the old deeds home. They were of parchment, and he cut them up for his wife, who used some for winding her wool on; while others she made into dolls for the children.

One day, when he was about seven years old, the boy Chatterton saw a Bible printed in that old-fashioned type which we call black letter.

The handsomely carved capital letters fascinated him. He learned to read from that difficult type, making himself a scholar from printing which would for ever frighten most of us away from reading. Previously so dull, he now proved marvellously quick at learning. He read everything that he could lay his hands upon. He would sit and dream for hours over what he had read, and sometimes would break into passionate fits of weeping. Young as he was, he took very little sleep, and ate scarcely anything. He obtained as his own a dusty little garret at the top of the

CONTINUED FROM PAGE 5237

house, and kept the key of the room himself. Then he would wander off to the church and study the tombstones, and make his way to the room where the manuscripts had been stored.

THE BLUECOAT TEACHER WHOM CHATTERTON LOVED

When eight years of age, he was sent as a charity scholar to the Bristol Bluecoat School, where he was very wretched, because he was taught only reading, writing, arithmetic, and the catechism. There was so much more that he wanted to learn. But a teacher there named Thomas Phillips encouraged him, and the boy loved him. Straight from school the boy would fly to his attic at home to study. There he had a pan with a huge piece of ochre, a bottle of black-lead, and some bags of charcoal, and, locking himself in, he would work for hours at heraldic designs, drawings of knights in armour, of churches, and so forth.

Everything that he did was associated with the past and its manners. But he was not content with drawing. When he was only eleven years of age he wrote his first poem, and it was printed in a Bristol magazine. As soon as he began to write poetry his gloomy spirits departed, and he became much happier. All his pocket-money he spent in taking out books from the library.

A pocket-book which his sister gave him for his eleventh birthday he filled with writing, among which were two poems that are now printed in the book of his poems. In this year he read over seventy books, mainly history and religion.

One day, after he had been studying some old documents in the church tower, he found at home a piece of parchment on which, years before, his mother had wound her silk. He examined the writing on it, and said that he had found a treasure. He carried it to his garret, and sought for all the other pieces still remaining about the house.

THE BEGINNING OF A BOY'S TRICK THAT DECEIVED THE WORLD

Midway through his twelfth year, Chatterton showed to his teacher Phillips a poem called "Elinoure and Juga." It was on discoloured parchment, and looked very old. Phillips was convinced that it was a very old composition. Chatterton answered that it was a poem which he had found among the old parchments of the Canynge family, taken home by his father from the church tower. The truth is that the poem had been written by this little boy of eleven and a half years. He had deliberately put it into old-fashioned language with old-fashioned spelling. In order to do this he had to read books of old English words and names. He had copied these out for himself. The thoughts of the poem were, of course, entirely his own, but he preferred to clothe them in language such as would have been used three hundred years before. He quite deceived his teacher, and thus encouraged, he proceeded to a more daring deception.

He went one day to the shop of a worthy Bristol pewter manufacturer named Burgum, to say that he had found among the church parchments a pedigree of one named De Bergham. This, said Chatterton, connected the honest pewterer with that De Bergham, and showed him to be related to some of the noblest families in the land.

HOW THE WONDERFUL BOY WROTE POEMS IN THE LANGUAGE OF 300 YEARS BEFORE

Soon afterwards Chatterton took him a copybook in which he had neatly written what was described as "An account of the family of De Bergham, from the Norman Conquest to this time, from Original Records, Tournament-Rolls, and the Heralds of March and Garter's Records, by Thomas Chatterton." It was an elaborate and wonderful piece of work, but, to speak frankly, it was an absolute forgery, as the silly Burgum found when he went up to London to the Herald's office to have the pedigree duly recognised. No such person had ever borne arms. There, however, was the pedigree, according to Chatterton, and the pewterer had paid him ten shillings for it. In the document were three poems by the boy, which he declared to have been written by Burgum's ancestors. They were his own composition and marvellous pieces of work.

By this time his success had fixed in Chatterton's head the idea of a great pretence. There never was such a forgery before or since by a boy. What he did was to write the most wonderful and beautiful poems of his own, and put them into this strange old English language and declare that they had been written by a priest named Thomas Rowley, three hundred years before. There had never been such a person as this Thomas Rowley, but Chatterton gave

chapter and verse of his career, showing that he had been an unofficial priest at St. John's Church, Bristol, and had acted as confessor to the mayor of the time, William Canynge, a great merchant, famous in the history of the city.

Chatterton was not quite fifteen when he was taken away from school and apprenticed to a lawyer. The school provided the ten pounds necessary to get him into the office, and now a new and hideous life began. The wretched boy was a mere slave. He slept at the lawyer's house, where he had to share a bed with the boy who cleaned the boots. Chatterton's office hours were from seven o'clock in the morning till eight o'clock at night—thirteen hours a day. He was allowed to go home each night from eight to nine, and glad he was to escape from a man who treated him like a menial and made him eat his meals in the kitchen.

How Chatterton must have disliked his master ; he, the poet with the soaring mind of an eagle, burning with ambition and scorn, treated with contempt by the humdrum lawyer ! Still, he was a good servant. He would soon clear off his duties each day, and the rest of the day he would devote to his own work. If his master caught him, he instantly burnt anything not written for office purposes. In spite of all, however, in two years and a quarter Chatterton managed to write an extraordinary number of poems, which he declared to be the work of Thomas Rowley and other writers of ancient days. Also he read extensively and educated himself with wonderful facility. On Sundays he took long solitary walks. He had practically no companions, and never took anybody into his secret, not even his mother or sisters. When Chatterton was sixteen years and

CHATTERTON IN HIS ATTIC, WRITING A POEM ON AN OLD PIECE OF PARCHMENT

one month old, a new bridge was opened in Bristol. What was the astonishment of the good people of the city, then, to read in their local magazine a full account of the opening of a similar bridge by the Mayor of Bristol in 1248. It was alleged to have been taken from an old manuscript. Chatterton, who had sent in the account in a false name, was discovered, and he said that he was employed by two gentlemen to copy out certain ancient manuscripts. The very manuscript that Chatterton wrote, giving the bogus story of the old bridge, may now be seen at the British Museum, with many

more of his extraordinary productions. But Bristol believed it all, though Chatterton, for once in his life, confided to another boy that he had really written it himself.

Immediately afterwards, Chatterton produced more of the so-called Rowley poems, and someone who read them with admiration sent them off to Horace Walpole, the great friend of authors and artists, and himself a writer of distinction.

How the Poet Gray Discovered Chatterton's Strange Secret

Walpole was just as completely deceived as the rest, and wrote Chatterton a very complimentary letter offering to get them published in London. Chatterton in reply told Walpole that he was the only support of a widowed mother, and would be glad of assistance in the way Walpole suggested. He said nothing about the poems being his own work, of course, but sent some more with his letter.

Walpole, in his delight, showed the poems to Gray, the great poet, who at once said that the poems were forgeries, that they had not been written three hundred years before. Chatterton next tried to get a London publisher to print one of the finest poems he ever wrote, but failed. He did, however, get one or two things accepted by the London Press, and the name under which he wrote was becoming known farther afield than Bristol. But now the end was rapidly approaching.

One day, being short of money—every penny he possessed having, as usual, gone on books—he tried to borrow a little money of Burgum, who, at the last moment, disappointed him. Chatterton, who had often talked of suicide, was in despair, and sat down at the office and wrote out his will. It was an extraordinary document, and, being found by his master, horrified him. He at once dismissed the boy from his office, and here was our poor young genius, on April 16, 1770, without a situation, and without a single penny in his pocket.

The Brave Attempt that Chatterton Made to Conquer London

He was not in the least alarmed. Indeed, he rather rejoiced, for in a letter of the time he wrote: "Nineteen-twentieths of my composition is pride." A few friends raised a subscription, and, high in hopes, he set out for London with five guineas in his pocket, and a little bundle of manuscripts of his pretended ancient writings under his arm. He did not fear London; he meant to conquer London. At first all promised well. He took lodgings with a respectable family in Shoreditch, where he shared a bedroom with the son of the landlord, an honest plasterer. Chatterton required little sleep; he was writing nearly all night. He wrote political matter, poetry, stories; he wrote a little play, for which he was paid five pounds. In two months he earned eleven guineas, and thought his fortune was made. Out of his first five pounds he sent gifts to his mother and grandmother and sister. A heart-breaking little list it is, showing how this strange, wild genius loved those at home in the humble little alley in Bristol.

He got an introduction to Lord Mayor Beckford, and, on the strength of this, got many articles accepted, and believed that he had London at his feet. But suddenly the Lord Mayor died, and editors who had favoured the bold views of the Lord Mayor feared when that strong man passed away. The articles which they had accepted from Chatterton's pen were held over; his supply of money came to a sudden stop.

The Poet who Tramped the Streets by Day and Wrote in a Garret at Night

In June he had moved to a house in Brook Street, Holborn, where he had a little garret. He nearly starved himself, and burnt up his strength by tramping the streets with his writings by day, and going starving to his garret at night, there to write with furious energy until dawn came to drown the light of his candle. His kind-hearted landlady, seeing that he got nothing to eat, once or twice begged him to take food with her, but though he appreciated the kindness, he was too proud to own that he was hungry. Things could not last like this, and, after three days without food, he spent his last night tearing up every shred of his writings. In the morning, when his landlady went to call him, she found the door locked. Gaining admittance to the room, she saw the poor boy dead, with a bottle lying near him, from which he had drunk poison.

So on August 25, 1770, ended the life of this unhappy youth, one of the greatest poetic geniuses the world has ever known. The poems which he had begun to write at eleven years of age, and finished before he was well into his eighteenth year, puzzled the chief scholars of the

country for the next eighty years. Some of them were of matchless beauty, splendour, and power. Many illustrious men maintained that they really were the work of some monk who had lived in the fifteenth century, and for eight years there were angry debates as to the authorship. The mystery has all been cleared up now, of course, and we know that every one of these extraordinary poems was by the hand of this marvellous boy. He got his old English words from dictionaries and old books, but his genius supplied the thoughts which these words clothed.

Why did he pretend that his work was the work of men born hundreds of years before? Perhaps he thought that if people knew that they were his own work they would pay no attention to them. Perhaps it began in his love of mystifying people. At any rate, the deceit became a habit with him. Whenever he soars to the topmost heights of his powers, it is when he is pretending that his work is the achievement of some monk who had been dead for a long age.

Many great poets and critics almost worship the memory of the unhappy boy. They declare him to have been the equal of Shakespeare and Milton, remembering, of course, that they have to compare a mere boy with men whose powers had full time to develop. Whatever the exact standing which we ought to accord him, it is now realised that all our poets since his death have gained inspiration from his works. He revived the spirit of romance and imagination in poetry.

Though his life was one long-drawn misery, he did not live in vain; his work breathes through the beauties of all the later poetry, and we may all take our stand with Wordsworth, Coleridge, Keats, and Rossetti, in looking back upon his brief career with a kind of awe, as on the track of some bright meteor passing earthward through a night of gloom.

PEASANT GIRL AND EMPRESS

THE INNKEEPER'S DAUGHTER WHO SLEEPS IN ROME

UNDER a great dome in the Vatican at Rome are two splendid tombs. One contains the body of the daughter of Constantine; the other is the tomb of St. Helena, the mother of Constantine.

Helena was born quite a poor girl. Her father was a humble innkeeper, and she helped him at the inn, and looked after the cows and goats. The actual place of her birth has for centuries been a subject of dispute. Many authorities believe that she was born in England, but the truth seems to be that her birthplace was a tiny village in Bithynia, an ancient division of Asia Minor. There it was that, in the bloom of her youth and beauty, she was discovered by a great officer of the Roman Empire named Constantius Chlorus. The innkeeper's daughter won the heart of the Roman officer, and, without any thought of rank, he married her.

The great noble and his peasant wife lived very happily together, and in the year 274 she gave birth to a son, who was destined to become the famous Roman emperor, Constantine the Great. Until now the husband of Helena, though distinguished in the state, was only a governor. In the year 292, however, a terrible sorrow came upon her. The great Roman Empire was divided into four parts, and her husband, Constantius Chlorus, was made the ruler of Gaul, Spain, and Britain. But he had to choose between the wife he loved and the great position now offered to him. The Emperor Maximian, who offered the crown, offered also his daughter Theodora in marriage. A Roman emperor must have a wife of noble birth, and so, to gain the crown, Constantius divorced poor Helena, and married Theodosia.

Constantine was twenty when this happened. He must have been terribly grieved at this slight cast upon the mother he so passionately loved, for he did not accompany his father when he took up his new dignity. He remained with his mother, and later went away as a soldier on his own account, so that he became a famous warrior without any assistance from his father. At last Constantius could bear the separation no longer, and wrote to Constantine begging him to go to him. Constantine went, making a journey full of terrible dangers to meet his father at Boulogne. Together they went to England, and when his father died at York, in 306, Constantine was proclaimed emperor by the soldiers.

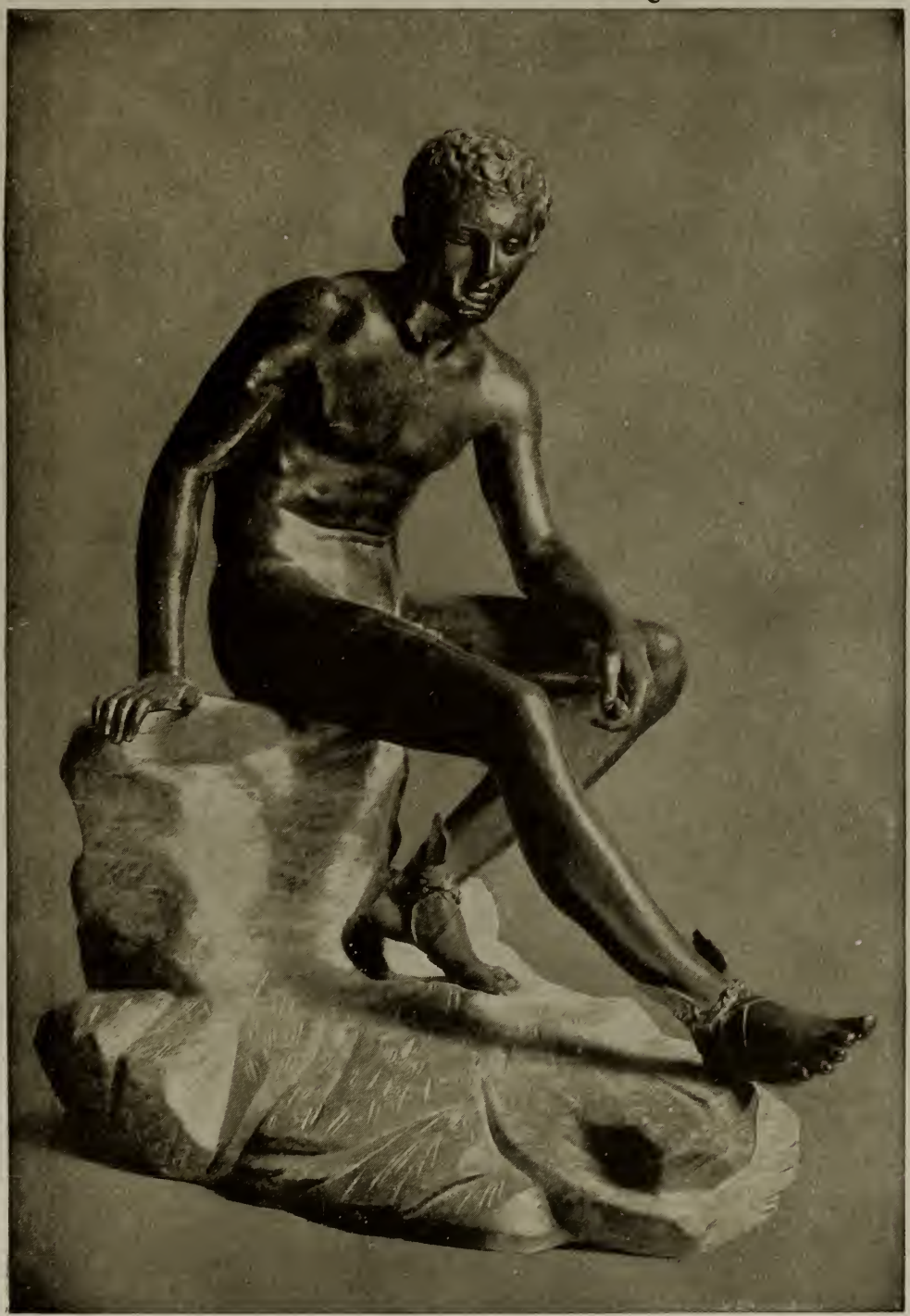
One of the first things Constantine did was to raise his mother to rank equal to his own. He made her empress, and the poor peasant girl of other days was

respected and beloved by all in the land. But this Saint Helena, as we now call her, was all this time a pagan. Christians were terribly persecuted in Rome at this time, and she had probably never thought of becoming a Christian. Her conversion was the result of a strange thing which Constantine himself seems to have believed. Before he could bring order and peace to the Roman Empire he had many great battles to fight, and in one of these battles Constantine saw, or believed that he saw, a flaming cross in the sky, and the words displayed across the heavens: "By this conquer." He regarded this as a sign from heaven, and became a Christian. He made Christianity the religion of the great Roman Empire, of which he was now master, and the Roman legions in time all carried the cross as their standard. It was the conversion of her son that brought about the conversion of Helena. She came forth from the retirement in which for so long she had lived, and devoted her life to Christian acts. When nearly eighty years old she set out on a pilgrimage to the Holy Land, and discovered what was believed to be the Holy Sepulchre and the Cross. She is said to have had the Cross divided into two parts, one of which she left with the Bishop of Jerusalem and the other she sent to her son. Helena remained in Palestine for some time, and built churches at Bethlehem and on the Mount of Olives. She visited many of the churches of the East, giving liberally to each and bestowing much alms upon the poor wherever she went. At last she returned from her long travels, and died in her son's arms in 328, in the eightieth year of her age. Constantine had the body of his mother carried in state to Rome, and buried with the highest honours. The poor peasant girl of other days had come from poverty and obscurity into high place as the wife of one of the great men of the empire; next she relapsed into obscurity as complete as that in which her girlhood had been passed. Then, through the affection and respect of her illustrious son, she was made the first lady in the empire and the leading figure in the Christian Church. And at her death she lay amid the greatest figures of the nation which had ruled all the known world. After her death Helena was canonised by the Church—that is to say, the Church found that she had lived so pure and godly a life that she was to be regarded as a saint. That is why we now call her St. Helena. It is from her that so many of our churches take their name. There are many churches bearing her name round about York, where it is held that Constantine was born. Thus we find, among others, churches named after St. Helena at Escrick, Stillingfleet, Wheldrake, Thorganby, and Skipwith. One strange little irony remains to be noted. Before the Reformation there was in York itself an old church built on the city wall. In that church lay the body of Constantius Chlorus, father of Constantine the Great and husband of St. Helena. But no one ever thought of him. It was of the good peasant woman that they thought. They called the church St. Helena's, and never gave a thought to the dead emperor sleeping in the casket within the church bearing the name of the poor woman whom, in the hour of his triumph, he despised, thinking himself far above her.

THE VISION OF ST. HELENA

THE NEXT BOOK OF MEN AND WOMEN IS ON PAGE 5393.

A PERFECT SPECIMEN OF ANTIQUE BRONZE



This exquisite figure is thought to have been cast as early as the second half of the fourth century before Christ. It was found at Herculaneum, — that ill-fated Italian city covered with lava streams from Vesuvius' most destructive eruption, 79 A. D. With this lava was mud and gravel. As the mixture hardened it formed a matrix eighty feet deep, and although marble and wood suffered, the bronzes, which the biting acids of the earth would corrode, were not injured. To-day, after excavation, the many statues are as perfect as when their sculptors rejoiced in work well done.

THE FAMOUS DOGS OF ST. BERNARD, THAT SHOW ALMOST HUMAN INTELLIGENCE

HOW ANIMALS TALK TO EACH OTHER

When we think of animals talking to one another, none of us expects them to have a set language such as our own. We know that they do communicate with one another, but it is not by means of words such as we use.

How do we know, then, that they talk? We judge by results. Horse talks to horse, and does his best to make himself understood by man. Dog talks to dog, and, in a hundred different ways, seeks to speak to us. Cats have their own language; the wild beasts of the forest, of the plain, and of the mountain, have their speech; the birds are gifted with a considerable language; and the insects have, perhaps, the most varied language of all. Few of us know even the A B C of the animal language; and this story will not pretend to teach it. We shall, instead, think over things which show that animals do communicate one with another, and we shall try to understand how some of them do so.

With few exceptions, all the higher animals make use of their voices. But we are not to suppose that the speech of animals is confined to the sounds which we ourselves are able to interpret. There are other ways of communicating than by the voice.

Let us suppose that some person from a far land, say, an Eskimo, were to discover two deaf-and-dumb boys "talking" upon their fingers, would that Eskimo imagine that a conversation was in progress between the two? The method would be strange, and not to be understood by this Eskimo, who could never have heard of such a thing as the deaf-and-dumb alphabet. There are open to the animals ways of speech quite as wonderful as that employed by our skilful deaf-and-dumb boys and girls.

Let us start at the top of the animal tree, and think of the monkeys. We know that they have means of communicating one with another.

We all remember the story of Jenny, the orang-utan in London, who did such clever things under the instruction of her friend and trainer, the keeper. One day she went farther from her cage than he had meant her to go, and he pretended to be cross with her. She instantly ran up to him to make friends, put her arms round his neck, kissed him, and whispered to him till she believed herself forgiven. He did not understand what she was whispering, as, doubtless, one of her own species would.

A very different experience of ape language befell Brehm, the great German traveller and naturalist. He came upon a troop of baboons, and two bold dogs which he had with him went in pursuit. The baboons ran away, leaving behind, however, a baby baboon, which Brehm hoped the dogs would catch for him. But, as

CONTINUED FROM PAGE 5280.

the dogs drew near, there was a loud outcry among the baboons; and, while the rest yelled their battle-cry to frighten the dogs, a big old baboon came quietly but quickly down the rocks, snatched the little one away almost from the jaws of the dogs, put it in a place of safety, and kept guard until it had got up to the rest. Two days afterwards, Brehm met the same troop. Again the apes raised their battle-cry. Brehm discharged his gun at them. The females fled in haste behind rocks with the young ones, while the big males, roaring and barking, sprang upon the edges of rock, and then deliberately rolled big stones down upon Brehm and his companions. The baboons all acted under the command of their leader, and one actually climbed a tree, with a stone in his arms, that he might have a better and higher position from which to throw his missile.

AN INTELLIGENT MONKEY

Many such cases have been recorded, so that there is no chance of a mistake. Take an even more notable example. Here the animals were a party of baboons at the Cape of Good Hope. They had stolen some clothes from barracks, so Lieutenant Shipp sent a squad of soldiers to recover the articles. The baboons made for some caverns, which the soldiers tried to prevent them from reaching. But the baboons were too quick; they posted fifty of their number to guard the way to the caverns, and the others distributed themselves like soldiers at various posts, and hurled down great stones on the soldiers. The leader was an old, grey headed baboon which the soldiers knew quite well, for it had often paid friendly visits to the barracks. He was the general, and the soldiers could hear him issuing his orders to the rest, while the others obeyed him as soldiers obey their officers. Here the English soldiers had to retreat before the apes, as Brehm and his friends had had to do—to retreat from ape-soldiers who acted like human beings, upon the spoken instructions of their skilled commander.

OUT FOR A WALK

It is not easy to study the language of such terrible animals as lions and tigers. We know that the lion roars like thunder to terrify his prey, or to challenge other lions to battle. But when the male lion talks to the lioness he uses gentle language, and will purr to the lady of his love like the great cat that he is. The speech of the tiger is not more easy to describe, but we may see by a story what happens when the tiger does speak. A few years ago a man who was resting after a day's hunting in India suddenly felt himself crushed to the ground, and, on coming to his senses, found that a great tiger was carrying him away in her mouth. She carried him about a mile and a half, then put him down His left shoulder was broken, and he dared not move, though he still managed to clutch his gun in his right hand. The tigress now raised her head and gave a long, soft cry The answer came from a jungle near by, and two tiger cubs, her babies, came scuttling up. They were terribly frightened when they saw a man lying at their mother's feet. But she cried softly and purred to them, and taking him up in her mouth, gently shook him, and tossed him about from paw to paw as a cat tosses a mouse. She was telling them by speech and by action to come and eat him. After much persuasion of this sort they approached, and began with their baby teeth to tear at his legs, until, rolling over on to his side, he managed to level his gun, and shot the tigress through the heart. Tame tigers mew to call their keepers to them, and purr with

pleasure when they are answered. They have a certain cry when they want water, and another kind of cry for food.

If we notice half a dozen boys put their heads together, then separate, and all set to work, we imagine that they have agreed upon some plan. A similar conclusion is reached, then, when we see animals do the same sort of thing. Two foxes were seen descending a narrow, rocky valley. They stopped at the bottom, put their heads together, and seemed to be coming to some agreement. One of the foxes now lay down in some bushes, while the other returned up the little valley. Presently down came a hare, running as fast as it could, with the fox hard after it. The hare shot past the concealed fox, which darted out a second too late, and so missed the hare. The second fox came up immediately, stopped when it reached the first, made an angry sound, expressing disappointment, then attacked the bungler which had spoilt the ambush that they had planned together.

There is no doubt that cats try to speak to their masters and mistresses. Many cats have warned human friends of fires which have broken out in the night. Extraordinary evidence of intelligence was given by a cat in a suburb one September night in 1906. Its mistress was aroused from sleep by the cat mewing and scratching her. This behaviour was extraordinary in so affectionate a cat, so the mistress sat up in bed and looked about her. She at once discovered the cause of the animal's anxiety. Her husband had been seized with a fit, and was lying desperately ill, and the cat had wanted to call the wife's attention to the matter.

A clergyman not long ago saw a young cat, which had been absent from home for a week, return to the garden by way of the wall. Its mother lay on the lawn, and the kitten, which looked fat and happy after its long absence, went up to her. She got up, and they put their heads together as if talking. After a minute or so, the kitten and its mother bounded on to the wall, and off they went together. They were absent from their homes for more than a week, then returned in the best of condition. Without doubt the younger cat, on first returning to the lawn, had told its mother of some great find, and she had gone away with it to share its good luck.

Wolves make very clever arrangements before setting out to hunt deer. They come up to a place in a body, hold a sort of conference, then divide, and each one takes up a place for itself. One wolf will then approach the deer, and drive it in a certain direction. The deer is too fleet to be caught like this, but up jumps a second, untired wolf, and drives it a little farther. A third wolf will chase it

THREE ORANG-UTANS AT DINNER

The manlike apes are remarkably intelligent and almost human in their behaviour, and not only do they chatter among themselves, but they have a habit of whispering into one another's ears, as if in intelligent conversation.

toward another ambush, and a fourth will continue the chase, always working toward where another wolf is concealed, until finally one of the hidden hunters is able to dash out and make the capture. All the other wolves then come up and share the food thus won.

Naturally we expect more than the average amount of intelligence in the elephant, and we are not disappointed. It has a voice like a clarion for communicating messages to far-off companions. How this acts we know from Mr. W. T. Hornaday, who, a few years ago, was in India to get elephants for the New York Zoological Park. An attack was made upon a herd of wild elephants, and the herd was divided into two parts. One half went north, while the other half fled south. The hunter's camp lay between the two sections. About bedtime, says Mr. Hornaday, the elephants began signalling to each other by trumpeting. The sounds were just such as a bugler would sound were he calling troops to assemble. One herd called, and the others answered, and it soon became clear to the hunters that the two herds were advancing from different directions to unite. And the two herds did unite, guided, the one to the other, by the signals. The trumpet-call, says the hunter, was "a regular *helloa* signal, and quite different from the *taloo-e* blast which elephants sound when feeding."

But there is a silent language which elephants employ. We must remember that in time of drought many pools at which animals drink dry up, so that a great number of wild beasts are driven to the pools which still contain water. Hence enemies are brought together, and experience has taught them all that men are likely to lie in wait at these spots to shoot them. One dark night in summer an English officer climbed a high tree overlooking one of these watering-places to watch for a herd of elephants coming to drink. For two hours he waited without detecting a sign of life; then, very quietly, a huge elephant, such as the herds always follow, stalked out of the wood and walked very cautiously toward the pool, halting near it, and remaining motionless, listening intently.

Feeling satisfied at last, he returned to the wood, and came back, accompanied by five other elephants. They all marched slowly to the water, and the leader posted the five as sentinels in five different positions near the pool. Then once more he went back to the wood, and this time brought out the whole herd.

A YOUNG ELEPHANT GRIEVING OVER THE DEATH OF ITS MOTHER

Elephants show many feelings that are quite human. In the first of these pictures we see a young elephant trying to wake up its dead mother by touching her with its foot, and in the second it is trumpeting loudly to express its grief.

Eighty elephants trooped down to the water to quench their thirst, but not until their leader had come out to see if all were safe. They had waited to receive instructions from him, and now they and he and the five sentinels drank their fill. The officer, who watched with wonder, felt convinced that the whole plan had been carefully arranged in advance, and that the whole herd acted entirely under the control and direction of the splendid beast which led. It was a triumph for silent language.

It is after elephants are tamed, however, that we are able to see some of the most wonderful things that they do. Two tame elephants had to climb with their loads up so steep a place in the mountains that their drivers placed

YOUNG LION CUBS INTERESTED IN THE CAMERA THAT TOOK THIS PHOTOGRAPH

tree-trunks as steps for them. The first elephant to go did not like the way at all, and complained with loud cries to the one waiting below. The latter watched with the greatest interest and could not keep still, but was moving about all the time, as if trying to help its comrade, just as we see men moving their hands and feet when watching a gymnastic display.

At last the first one reached the top, and the turn of the second came. He was just as nervous as the other. The one at the top waited anxiously, and as soon as he could, he put out his trunk, curled it round that of the other elephant, and pulled the latter safely up.

And then what a scene of joy there was between the two! They "embraced" each other with their long trunks, and stood face to face for a long time, as if whispering congratulations.

A word now for the conversation of the pigsty. Let us remember that by nature the pig is one of the cleanest and most intelligent of animals; it is only the cruel manner in which men neglect the pig which makes this animal's habits so unpleasant. There was a famous pig in the New Forest which was taught to find and bring back game which its master shot.

This pig had a numerous family of little ones, and she noticed that, one by one, these were disappearing while she was out hunting with her master. The little ones were being taken and eaten by their owners. One night, the big old mother-pig was missed from her home, and men set out in search of her. They found her and the remainder of her family on the verge of the forest. She was talking busily away to them in the best

AN INTERESTED CONVERSATION BETWEEN TWO LIONS

of pig language, and driving them to a place of safety in the woods, away from the sty from which so many of their brothers and sisters had gone to the roasting-spit, in their mother's absence.

How whales talk we do not know, but we do know that the mother whale is a devoted parent who will fight to the death for her little ones. Brave, too, are the seals. The male seal will defend his family until he is struck dead. The mother does not wait; she calls her children with a voice like that of a bleating sheep, and away they shuffle to the sea. She talks to them in this way when danger does not threaten, and it is at the call of her voice that they go to the sea to learn to swim when they are babies.

We must all have noticed that rats and mice have some way of talking. If a rat should discover a new source of food supply to-night, by to-morrow night he will have brought a dozen friends with him to share, and these in turn will bring dozens more. But do we ever think of the frog as a talker? He must talk pretty well. If we walk quietly up to a frog's pond on a warm night in spring, or early summer, we hear the frogs talking. Make a sound, and there will be heard one loud, commanding croak, then a series of flops, and after that perfect silence. The leader of the frogs has sounded the danger-signal, and all the rest have popped down under water.

A CAUTIOUS FOX

Here is an instance of communication of a different kind. A gentleman who lives in a country house was alone in his house for some time a summer or two ago. At the bottom of his garden runs a meadow in which frogs live. One of these frogs made its way into his garden and lived in his rhubarb-bed. He did not like frogs, but some of his visitors did, so he let this frog remain where it was, free to come and go in the meadow or in his garden. One evening, as the gas was lighted in his house, what should he see on the door-step but the frog from the meadow and the rhubarb-bed! The weather was very chilly, although the time was summer, so there was a fire in the sitting-room. Master Frog, hopping through the doorway, entered the sitting-room, looked about, then hopped toward the fire, and squatted down, blinking comfortably at the cheery blaze. The gentleman was amazed at its impudence, but let it remain for an hour or so, then he gently put it out of doors and went to bed.

Next night the frog was there again, so he felt bound to feed it, for mere hospitality's sake. He knew nothing about the diet of frogs, so after puzzling his brains he put down some powdered sugar. And, astounding to relate, the frog ate it—every speck of it. After staying its hour, it was put outside. There had never, up to this time, been more than one frog at a time in that garden, so far as was known, but the very next night after the supper of sugar, the frog came back, accompanied by its mate. Both creatures received sugar that night, and they enjoyed it. Every night for the next three weeks the two frogs appeared at the same time at the house, were admitted, and were given their supper of sugar. And then, at the end of the third week, the kind-hearted gentleman had the misfortune to tread on one of the frogs and kill it. The other one went out as usual, but was never seen afterwards. It could not understand that its mate had been killed by accident, and it could not go again to the place where its mate had come by its death.

From wild animals we come back to tame creatures. Anyone who has had donkeys in his neighbourhood need not be told that these animals talk to each other. There is a cheeky little Shetland pony, who has had his portrait in the Children's Encylcopædia, who knows how to talk to a donkey. The pony spends an hour or two every day in a meadow adjoining his stable, and some times a donkey is to be seen in the field next to it. The pony, on being turned into the field, first takes a gallop all round, then canters up to the iron fence, and neighs. This call brings up the donkey to the other side of the fence, and

the pony waits for the donkey to put his head between the railings and gently nibble his neck. Then he returns the compliment by nibbling the neck of the donkey. That is an exchange of service which horses and donkeys love.

This pony has his set speeches with which he summons people to his stable. He has a shrill neigh which announces that, according to his appetite, it is time the groom went to feed him; he has a low whinny which expresses his pleasure when he hears a familiar footfall approaching his stable. If he wants to come out, he knocks at the door with his front feet. Should he by any means be short of water, he will tap at his bucket with one of his hoofs until somebody supplies him.

But what of the dog and his speech? That he understands much that we say, all of us who have kept dogs know. A fine example is furnished by a gentleman who was talking to a Scots shepherd of the latter's dog. The shepherd, to show the intelligence of the animal, said in the middle of a sentence about something else—and said it in a low voice without looking at the dog—"I'm thinking, sir, the cow's in the potatoes." The dog instantly leapt up, sprang through the window, and clambered up on the turf roof of the hut to get a good view. Not finding the cow in the potato garden, it went to the cow-shed, saw the cow there, then returned. The trick was repeated, and again the dog darted off, with similar results.

TWO TERRIERS TAKING A WOUNDED COLLIE DOG TO A LONDON HOSPITAL

This picture is reproduced from the painting by Yates Carrington at King's College Hospital, by permission of Messrs. A. and F. Pears.

Presently the shepherd said, for the third time: "The cow's in the potatoes, sir." But this time the dog merely got up, showed his teeth as if in a smile, growled at his master, then curled himself up before the fire, and refused to go out.

There is a good deal of language in the bark and in the whine of a dog; the dog can almost speak to us with his eyes, with the twists and jerks and shrugs of his body. But how do dogs talk to one another? Perhaps at times their thoughts are transferred, without sounded words, from dog's brain to dog's brain, as we transmit telegrams without telegraph wires. It is certain that nothing could be heard when the following incident took place. A puppy, nearly full-grown, was lying on a garden wall, while his father lay below. Suddenly the puppy spied an enemy, a big dog, running down the road. The puppy jumped down and went to his father. They put their heads together and seemed to be talking for a moment or so. Then both leapt on to the wall, jumped on to the road, and set off, as hard as their legs would carry them, after the big dog. Alone, neither was a match for the big animal; together they could thrash him, and they would have done so had not their master, after following them for some distance, called them back. More wonderful than this, for the reason that it was in a better cause, was the action of a spaniel which was found lame by a kind doctor. He took it home and cured it, and let it go. A few months later the spaniel returned, quite well, but bringing with it another dog which was lame. With pitiful looks and whines it seemed to beg the good doctor to give its friend as kind treatment as it had received itself.

HOW MULES PASS ONE ANOTHER ALONG THE EDGE OF A PRECIPICE IN THE PYRENEES
These animals show remarkable intelligence. When they meet on a narrow ledge, the mules going one way lie down and keep perfectly still while the animals going the other way step over them, as seen here.

Lest we should think this is too wonderful for belief, let us recall an incident which happened at a London hospital. Three dogs marched in there one day. Two of them were terriers belonging to a well-known bookseller.

These two were all right, but between them they helped into the hospital a big collie dog which had been injured. The terriers lived near the hospital, and their master's explanation is that, frequently seeing injured people taken there, they had come to the conclusion that a place which was good for suffering men, and women, and children, must be good for suffering dogs. But how eloquently they must have talked to persuade the injured collie to let them take him to the hospital!

THE NEXT STORY OF NATURE IS ON PAGE 5411.

THE LOUVRE IN PARIS, ONCE A FAMOUS PALACE. NOW THE LARGEST MUSEUM IN THE WORLD

CONTINUED FROM PAGE 5268.

A FIRST HOLIDAY IN PARIS

THE BEAUTIFUL SIGHTS OF A BEAUTIFUL CITY

OUR second "armchair" journey takes us to Paris. We are joining, in imagination, a happy little party of schoolgirls spending their spring holiday with Mademoiselle, their French teacher, in that beautiful and most interesting city.

The prospect of really needing their French has spurred the girls on to learn quickly and well, and to follow with delight the lessons of Mademoiselle from the large map of Paris on the class-room wall. They all try to outdo each other in the neatness of their outline maps, traced on tracing-cloth, showing the Seine and the principal streets, and in making the notes in their books to remind them of the makers of Paris, and the famous people who have lived in it.

At last the longed-for day comes. The small suit-cases are packed, ready to be registered through, with a few best clothes, for we are not going to climb mountains or run wild on the seashore. The little books of tickets are bought, our hand-luggage is compact and light, and we are off. We find ourselves at Dover an hour and a half after the good-byes at Charing Cross, before we have really calmed down over the exciting prospect of a fortnight's sight-seeing together, with Mademoiselle all to ourselves.

We stay on deck during the short crossing, and try to feel interested in the beauties of the choppy sea, and in the passing shipping, and in the fact that in mid-channel we can see the white cliffs of Calais before we have quite lost sight of the cliffs of Dover.

A little over an hour, and the eighteen miles are covered, and we step ashore, "foreigners" for perhaps the first time in our lives, feeling bewildered at demands for our tickets, and rather agitated over getting our hand-luggage through the Customs.

As our train passes along the sands outside the walls of Calais, we get a good view of the old-fashioned town, so long connected with English history and trade. It was here that Queen Philippa begged with tears for the lives of the brave citizens from the angry Edward III., and we remember, too, how deeply the miserable Queen Mary took the loss of the town to heart.

During the journey of three and a half hours between Calais and Paris, all is interesting and delightful. Boulogne, where Napoleon's boats waited in vain to conquer England, is soon passed, and we enjoy the look of the people and their luggage, the unfamiliar advertisements, the grey houses and stiff gardens, the rows of poplar-trees bordering the straight roads; even the restaurant car has its charms.

Still, we are glad enough to get our first sight of Paris, and to come to a standstill in the North Station. An omnibus is waiting for us, but it is half an hour before our luggage is claimed and passed by the Customs, and the porter can carry it off.

Our hotel is not one of the large, expensive ones, where many English and Americans go, but a quiet old French house on the left bank of the Seine, not far from the old heart of the city. No one speaks English, so

we shall have to make an effort to say our little greetings and express our wants and thanks in French.

How delightful are our simply furnished bedrooms, all opening into each other, with pretty white beds, and tables to write at, and the windows looking across the river to the buildings of the Louvre! Our few possessions are soon arranged, and our first French meal enjoyed, and then we sally forth for a walk—in Paris.

We do not need to go far; the quays close by, and the bridges, are full of busy life. There are the workmen in blue blouses and caps, going home from work; the women with their blue aprons and neatly dressed black hair, without any hats; the children with long plaits, all talking and laughing, and full of animation. How clean is the river, how fresh and keen the air; how fairy-like it seems when the lights begin to appear along the quays, outlining the bridges. and on the little steamers and barges! We eagerly look for the towers of Notre Dame, the spire of the Sainte Chapelle in the Law Courts, the Eiffel Tower, with its great light on the top, the highest monument in the world, and then home to bed—for kind, polite Madame makes her house feel like home to us—so as to be ready to start early in the morning.

THE BEAUTIFUL SAINTE CHAPELLE

Mademoiselle tells us, over our delicious breakfast of rolls and coffee—some of us prefer chocolate—that we are to begin with a birdseye view, so we joyfully make our way along the quays on the south side of the river till we come to the short bridges that lead on to the Ile de la Cité, the Isle of the City, and soon find ourselves walking round the great cathedral of Paris, dedicated to Notre Dame, our Lady, admiring the three-storied west front with its beautiful rose window, and the wonderful flying supports, or buttresses, round the choir.

But it is one of the towers we wish to ascend—resting on the way, for it is a good climb—to look at the fearsome monsters carved in stone that gaze out over Paris from the gallery round the towers. It is nearly 400 steps to the platform at the top, but once there we stay a long time, and we look and look, and do not want to talk. The river, like a silver thread, we see bordered by quays and crossed by many bridges. We see, too, many wide, straight streets and open spaces, with spires and towers rising from them, and in the distance are swelling hills.

At last, when we have looked long enough, Mademoiselle leads us back to the beginnings of this vast and handsome city, with its three millions of inhabitants. She bids us look down on the little boat-shaped island—formed of two or three islands, artificially joined as the years went on—on which Notre Dame stands. This is the true heart of the city. As we look, we are led to think of the settlement of fishers and hunters that was found here 2,000 years ago, and was described by Julius Cæsar. He called it Lutetia. The modern name, Paris, comes from the early tribes—the Parisii—who lived in Lutetia and the neighbourhood. By degrees came others sweeping over the country. The fierce, lawless Merovingians led their picturesque life here; many Franks of different families raced hither and thither, their long hair streaming in the wind. In front of the cathedral we noticed the great bronze statue of the hero Charlemagne; he stands out in the years about 800 A.D.

And then Mademoiselle leads us to think, as we look down on the Seine, with its busy steamers darting to and fro, of the days when the bold Normans swarmed up the river from Rouen, burning what they could not carry away. We then pass on to the foundation of the present cathedral in the middle of the twelfth century, and its completion a hundred years later in the reign of the saintly Louis. He built the Sainte Chapelle in the Palais de Justice, which is also on the Isle of the City, to hold the precious relics he brought home from the Crusade. He has been called the Father of Paris; and the small island covered with dingy white houses, lying behind the Isle of the City, is named after him.

Louis lived in other palaces besides that on the island; and there was founded in his reign, on the south side of the river, a sort of hostel for students, which grew in the course of centuries to be a great place for education. It is known as the Sorbonne, and the quarter in which it stands is called the Latin Quarter.

Coming down from the tower, we pass inside the cathedral, and sit awhile to admire the light streaming down from the upper windows over the double aisles with their cross views. What stories those pillars could tell if they had a voice! The funeral service of St. Louis was held here, also the coronation of the English king Henry VI., when ten years old, as King of France, for in the fifteenth century the English held Paris for sixteen years. Grievous was the havoc wrought at different times from "restorations" in the seventeenth and eighteenth centuries; and at the awful time of the Revolution the greater part of the old statues and choir chapels were destroyed.

THE CATHEDRAL OF NOTRE DAME

The splendid coronation of Napoleon I. and Josephine took place here, also the grand marriage of Napoleon III. In the frantic times when the successful Germans surrounded the city, they looked on with amazement at Frenchmen destroying each other and the buildings of their own beautiful capital. Notre Dame had a narrow escape. Chairs were piled up and set alight, and the building was only saved from destruction by the want of air and the dampness of the walls.

THE FAMOUS STONE FIGURES ON NOTRE DAME

But Mademoiselle tells us we have seen and thought enough for our first morning, and we are quite ready to follow her to lunch and a rest.

In the afternoon we take the steamer to the Jardin des Plantes, where there are animals, too. We spend a happy time watching the children and seeing their delight at the peacocks spreading their grand tails and shining blue among the bushes.

The next morning, early, we make our way to the Louvre, across the Pont des Arts—the Bridge of the Arts. We know the shape of the vast pile of buildings from our map, and from our view of it from the tower of Notre Dame; and before going inside we spend some time walking about the courts—the inner court, where we can see the corner in which the old castle of the Louvre once stood, and the larger court, where stands the statue of Lafayette—given by the children of America—and the monument of Gambetta, the French statesman. As we pass round, we think of the builders of the huge palace, as it grew through the centuries. Such were Francis I., he who had such gay times with King Henry VIII. at the Field of the Cloth of Gold; Catherine of Medicis, the mother of three kings of France; Henry of Navarre, the hero we know so well in Macaulay's poem, "The Battle of Ivry." Louis XIII. and Louis XIV. did their share, and so did, long after, Napoleon I. and III. The Louvre is now no longer a palace for royalty, but the largest museum and picture-gallery in the world. We may think of it as a picture-gallery, a museum of decorative art, and a historical museum all in one building. It would take us hours merely to walk straight through, so all we can possibly hope to do during our short visit to Paris is to look in for an hour whenever we can, and study just a few of the wonders displayed in the magnificent galleries and rooms. To begin with, we are all impatience to see the models of the Assyrian mounds, and to compare the treasures from them and from Egypt with those we know so well

in the Metropolitan. The time goes all too quickly while we are absorbed in the beauty and completeness of these collections, but lunch and a rest in a restaurant close by become a necessity.

After that, we are ready to return to the wide, open space beyond Gambetta's statue, the Place du Carrousel, and to examine the triumphal arch in memory of Napoleon's victories in Central Europe. The chariot group on the top replaces the famous group from Venice which Napoleon carried off, and which had to be restored to its owners later on. We enjoy the fine view looking west from this arch.

A BUSY STREET SCENE IN PARIS NEAR THE CENTRAL MARKET

over the gardens of the Tuileries and the wide, open Place de la Concorde, with the splendid avenue of the Champs Elysées beyond. We loiter long in the gardens of the Tuileries, while Mademoiselle tells us of the handsome Tuileries palace which grew up as a sort of sister palace to the Louvre, to which it was joined by the wings. The wings we see still standing after restorations, but the splendid main part, the body, so to speak, is all gone, burnt down about forty years ago by the men of Paris, who were maddened by the awful losses of the war with Germany. In the evening we gather in Mademoiselle's room, with our maps and plans, and talk over the tragic times of the vanished Tuileries. In fancy we hear the yells of the mob as they dance and shout round the carriages of the king and queen, Louis XVI. and Marie Antoinette, as they escort them from their palace at Versailles to the Tuileries. "We shall have bread enough now we have the baker and the baker's wife and boy," cry the crowd.

Next morning we start early so that we can spend a long day at Versailles, about twelve miles out of Paris. We take the tram, so as to see all we can of Paris and Sèvres and the fortifications, and are much amused to see the men poking their long rods into the carts to find out if anything that ought to pay duty is being smuggled. Arrived at Versailles, we first look at the wonder of the gardens. It seems almost impossible that the great expanse of woods and flower gardens, with lawns and ponds, a canal a mile long, and fountains that are the wonder of the world, was once a mere sandy waste.

But so it was when Louis XIV. turned his mind to making the desert into a blooming garden and the little hunting castle of Louis XIII. into a magnificent palace large enough for all the Court to live in. We wander about the paths

and terraces, thinking of the labour it cost to bring the water from a distance, and to lay out these huge pleasure-grounds, and plant all the avenues and shrubberies, and adorn them with such an enormous number of sculptures. We wish we could have seen the fountains play, shooting high up into the air in many jets. The fish in the ponds are delightfully tame, and willing to share our picnic lunch. As we pass through room after room in the vast palace, we are not surprised to hear that it was built to hold 10,000 people. We see the rooms of Louis XIV., and the Salle de l'Œil de Bœuf, the room with a round window like the eye of an ox, where Louis XV. kept his courtiers waiting about to see him put on his fine clothes. The rooms of Louis XVI. and his queen have a sad interest; indeed, all is sad at Versailles, the scene of the luxury and selfish extravagance when France was starving, that did so much toward bringing on the Revolution.

The pictures on the walls give us many vivid impressions of the history of France—portraits, pictures of great events, such as the Coronation of Napoleon and Josephine, with the Pope looking on; indeed, there are endless pictures of Napoleon in all the varied successes of his life. The acres of battle pictures are too dreadful to look at very long.

We spend some time in the long Gallery of Mirrors, realising the extraordinary fact that the German army encamped for some months at Versailles, and that the King of Prussia was proclaimed German Emperor in this very room in 1871.

Next day is Sunday. After church we stroll along the quays by the Louvre, and so to the Place de la Concorde, perhaps the largest and most beautiful square to be found in the world.

THE WONDERFUL GALLERY OF MIRRORS IN THE GREAT PALACE OF VERSAILLES

We look at the great stone figures representing the chief towns of France, noting that Strassburg—now lost to the Germans, with Alsace—is hung with mourning wreaths and crape. Then we come to the marble fountains, and between them the Egyptian obelisk from Luxor, like Cleopatra's Needle in Central Park, New York. It was almost on this spot that the guillotine was set up during the Revolution; and more than 3,000 persons perished here in the space of a year and a half.

In the afternoon we have a good stroll round the streets, and feel intensely interested in the holiday crowds and the air

of enjoyment over all, and we look at the Palais Royal, behind the Louvre, once so gay and bright, now so dingy, and we think of the young leader of the Revolution standing on one of the tables in the courtyard, pouring out fiery words to his excited audience, who snatched green leaves from the trees —green, the colour of hope—as their badge, and resistlessly forced their way to the destruction of the hated Bastille.

THE OPERA HOUSE

Next day, as most of the museums are shut, having their floors waxed, Mademoiselle has arranged a most delightful out-of-doors day. Off we start whence we can see all round this handsome part of Paris. Many wide roads lead out like rays from the arch. Descending again, we take the one that leads direct to the Bois de Boulogne. This park is a fragment of the forest that once filled the loop made by the Seine in which it stands. We find much to interest us—the upper lake and the cascade, the lower lake and the woods and walks, and the numbers of carriages. Mademoiselle tells us these have to go at a walking pace on the days of the great races at the Longchamps course, close by, when all Paris turns out in the gayest and most extraordinary of clothes. We seek a sheltered corner for our picnic lunch, and then find that Mademoiselle has a pleasant surprise for us. A friend of hers has invited us to tea with her children in the Jardin d'Acclimatation—a delightful playground, where there are both strange animals and strange plants to look at. Now, we have just been longing to speak to some French children—they look so charming—and here is our chance. They are younger than we are, but we are glad, for it is we who are shy, not they, as they come forward to speak the little English that they know and help us with our little French.

THE OUTSIDE OF THE MAGNIFICENT PALACE OF VERSAILLES, AS SEEN FROM THE GARDENS

in cabs, along the wonderful Champs Elysées, admiring the fine avenues, and seeing the children in the gardens bowling hoops, playing at battledore and shuttlecock, and thoroughly enjoying themselves under the care of their nurses in big cloaks and white frilled caps ornamented with handsome, wide plaid ribbons which hang almost down to the ground. Too soon we arrive at the Arc de Triomphe de l'Etoile, the largest triumphal arch in the world, which we have already seen from a distance on many occasions. The great sculptures upon it chiefly record the successes of Napoleon and his generals. We mount by the lift to the platform,

THE CLUNY MUSEUM

We soon make friends, the youngest of us joining them in riding on the elephants and camels, and driving in carts drawn by ostriches. And then they take us to the little ponies, standing in their nice stable, and they smile as we try to pronounce their names, and we watch the children going off to have riding lessons. We find the large rabbit-house, delightful also, and the absurd little dogs —all these are for sale. Presently we have coffee and cakes, and then a run through the gardens, finding most of the old zoo favourites under their French names. The hothouses recall the Bronx.

Next morning we leave a large bunch of roses for the children's mother, with a message of thanks, and then we make our way to the Greek sculpture at the Louvre. We look only at a few of the marvels, for Mademoiselle likes us to look earnestly at one for a time, and then shut our eyes and recall it in our mind, and then look again, thus learning it by heart. This we do with the beautiful Venus. We feel her quietly drawing us on all the way along the corridor at the end of which she stands alone. Some of us have seen casts of her before, but, oh, the difference as we look on the marble itself! We feel it delightful to see such perfect, peaceful beauty.

NAPOLEON'S TOMB IN THE HEART OF PARIS
Known as the Hotel des Invalides

Those who love the Parthenon Gallery in the British Museum in London are interested in the fragments of the frieze, showing the gentle Athenian maidens, in the Louvre, and we each find something that we particularly like to print on our memories—the Winged Victory of Samothrace, the Boy with a Goose, Alexander the Great, Discobolus Resting, Old Father Tiber, and other treasures. The afternoon turns wet, and, to our joy, Mademoiselle's friend asks us to come to see her children again. So we have the pleasure of seeing a French family at home, and greatly admire the shiny neatness and all the pretty arrangements. We teach our little friends how to play some of our games—Oranges and Lemons, and Nuts in May—and then they show us some French games. We are delighted with their picture books and song books, and the dolls and toys that they show us so prettily.

Next day is still wet, so we cross to the Louvre and spend a couple of hours getting to know some of the wonderful pictures. Mademoiselle takes us first to Mona Lisa, La Joconde. How she smiles; how her eyes follow us; how alive she is; and how strange the story of the mysterious theft and fortunate recovery. Leonardo da Vinci worked four years at this picture, and then it was not finished. It gives us a home feeling to meet with the splendid portrait of Charles I., by Van Dyck, and Hampstead Heath, by Constable. We stay as long as we like before the great pictures that attract us, but Mademoiselle thinks six, or eight at most, are as many as we can really remember at all well.

In the afternoon we walk or take omnibuses along the boulevards, the wide, tree-bordered roads built on the lines of the old fortifications, and are greatly amused with the life and bustle, especially with the boys shouting out the names of their papers, the chair-mender blowing a horn, the dog's barber with his box of scissors. We buy a few presents to take home, and also look in at the great Magasins du Louvre, where everything we can think of can be bought if we only know the right way to set about it.

Our treat next day is the Cluny Museum, built over the site of an old Roman palace, of which the only part left is some remains of its sumptuous bath. The present Hotel Cluny—it was the custom to call grand houses hotels in former days—was built over 400 years ago, and for long it was the home of royal and noble folk. Among them were James V. of Scotland, and Mary, the sister of King Henry VIII. and wife of Louis XII. Now, a great collection of thousands of interesting and beautiful things are safely stored in it, chiefly furniture and all kinds of rare works of art. It is a fine place in which to dream of bygone days, for here is the actual setting in which to put our mind-pictures of the grand lords and ladies whose portraits we have seen so often in Paris. We can fancy them gliding out of the door into the garden, sitting in the stiff chairs by the splendid carved chimneypiece, playing delicately on the musical instruments, receiving as presents — perhaps rather bored—the beautiful works in silver and gold and glass, handling those magnificent keys; and there are the clocks that ticked away their time so surely and so steadily!

THE INTERIOR OF NAPOLEON'S TOMB
Napoleon lies in the sarcophagus below

The rest of the day we spend on steamers up and down the Seine, gathering some ideas of the great water trade of the city, and watching at the quays the unloading of the wine, the corn, and other things needed by the inhabitants.

We have many times noticed the dome of the Invalides, and when we come next day to spend our morning there we find that the dome itself is but a part of an enormous pile raised by Louis XIV. as a refuge for his old soldiers, the invalids. It was planned to house 7,000; there are very few there now. The buildings round many of the courtyards are put to various purposes; others are used to display all sorts of arms and armour and relics of every kind of the terrible wars of the last few hundred years, that have drained France of her strong fathers and sons.

The Napoleon relics make the Man of Destiny very real to us. His grey coat, his well-known hats, his maps and telescopes, the toys of his adored little son, the pathetic relics of his lonely exile and death at St. Helena are all here. His remains were brought to the Invalides nineteen years after his death, to rest, as his will directs, by the Seine among the French people, whom he loved so well. We pass to his tomb, immediately under the dome, in a round, open well, twelve yards across, sunk in the floor of the church. It is all very solemn and impressive, the dim light striking down from the windows in the dome, on to the massive marble tomb and the undying laurel wreaths of the mosaic pavement, twined round the names of the terrible battles in which thousands of friends and foes passed together from the light of day. Round the crypt are twelve imposing figures, and sixty flags captured in battle.

And now Mademoiselle says that we have had enough sight-seeing, though there are hundreds more sights to see, and during the few days that remain we spend our time on the steamers, on the tops of omnibuses, in the various gardens. We choose the finest of the days to say good-bye to Paris from the top of the Eiffel Tower. We have felt ever since we came to Paris that the tower was stiff and ugly, and dwarfed the other heights

PARIS, THE BEAUTIFUL CITY ON THE SEINE

This view of the Seine, as it flows through Paris, shows many of the fine bridges that form one of the glories of the French capital. There are 32 of these bridges, the oldest, which was begun in 1578, curiously enough, being called the Pont Neuf, or New Bridge. The latest bridge, which is the most beautiful of all, was finished in 1900.

The most conspicuous landmark in Paris for the last twenty years has been the famous Eiffel Tower, that stands in the Champ-de-Mars. The tower, which dominates the city, as can be seen in this picture, is built of iron, and is 985 feet high. It cost $1,000,000 to build, and has been ascended by many millions of visitors from all parts of the world.

The photographs on these pages are by Messrs. Frith, Lévy, Géniaux, Neurdin, and others.

LITTLE FRENCH CHILDREN ENJOYING THEMSELVES IN THE PARIS ZOO

of the city; but now, standing on the third platform, over 900 feet from the ground—which we have reached by lifts—near the giant's head, we feel how wonderful it is to look over all the towers and spires—nay, we can see far away over most of the hills that surround the great city, and far away to the great wide France beyond. "Plenty to see next time," laughs Mademoiselle, as we rather gravely roll up our maps, reflecting that we have not seen St. Denis, nor the Pantheon, nor the Madeleine, nor the Luxembourg, nor the Trocadéro, nor much more that lies in the wide space below us.

And so to earth again and to pack, and then to Folkestone, saying very gratefully as we part, "Merci, merci beaucoup, chère Mademoiselle."

THE NEXT STORY OF COUNTRIES IS ON PAGE 5459.

THE HALL OF THE EMPERORS IN THE LOUVRE MUSEUM

THE GIANT'S PLAYTHING

CONTINUED FROM PAGE 5316.

LONG ago, giants lived among the German mountains. Now, there was a great castle, called Burg Niedeck, that stood on top of the highest mountain in Alsace, and here the most powerful of the giants lived with his wife and family. He had one child, a little girl named Freda.

Freda was as tall as a church steeple. She was a curious child, and very fond of prying about and looking at things which she had been told to leave alone. She was allowed to roam all about the mountains, and to play in the woods and forest, but she was not allowed to go down into the valley where the little people lived.

These little peasants tilled the ground, and planted corn and wheat and barley, and grew the vines, and dug the ditches, things the giants could not do. And the giants lived by taking what the little people made. Now, it was said that the first time a peasant found his way up into Burg Niedeck it would be the end of the giants. But Burg Niedeck was very high and difficult to reach, and no peasant had ever thought of trying to get there.

One day Freda was playing outside the castle gates in the sunshine. The valley looked so cool and green and shady that, seeing no one about, she slipped down the mountain-side to find out what was below.

Presently she saw in a field in which she was standing a peasant ploughing. He had two horses, and the iron of the plough shone and glittered.

With a cry of delight, Freda knelt down.

"What a dear little thing!" she said. "I will take it home to play with."

Spreading out her handkerchief, she carefully lifted the plough and the horses and the poor peasant into the middle; then, taking the corners in her hand, she ran up the mountain-side, skipping and jumping for pleasure. Her father met her at the gate.

"Now, little one," he said, "what is pleasing you so?"

"Look," said Freda, spreading out her handkerchief, "I have found a most wonderful new toy." And she lifted out the plough and the peasant.

But the old giant frowned and shook his head angrily.

"What have you done, thoughtless one?" he said. "The peasant is no toy. Have you not heard that as soon as a peasant comes to Burg Niedeck there will be an end of the giants for ever? Take it back instantly to the valley, and perhaps the spell will not break."

Sadly Freda took the plough and the horses and the peasant back and set them in the cornfield. But it was too late. That night all the giants disappeared, and in the morning the castle of Burg Niedeck stood in ruins. And to this day no giant has ever been seen there since.

THE WIND SINGS DOWN THE CHIMNEY

HANS ANDERSEN'S TALE OF THE SIGNBOARDS

THE Wind is a merry creature. Have you seen him sweeping across a field and making the wheat ripple like the waves of the sea? That is the Wind's dance. And the Wind not only dances, but he sings. Listen to him singing down the chimney now.

"Shoo! shoo! sh-sh-sh!" the Wind is saying. "If there were no old gentlemen wearing tall hats that I could send spinning down the road, I should be tired of town life. All the excitement and fun have gone from it. A hundred years ago there was nothing I liked better than a good blow down this street. It was more like a picture-show than a place of business. Every house was hung with signboards. There was the tailor's board with figures painted on it to show that he could turn the shabbiest rascal into a fashionable gentleman; the barber had a long pole with a wooden razor hanging from it; fishes, loaves, hats, cheeses—all the things, in fact, that were sold in the town — were painted on signboards, and when I made them swing and clatter, the noise was deafening. What a roaring, merry time I had one night when I got among the signboards! Let me see. What was it set me on that piece of mischief?"

The Wind grew silent for a few minutes, and then gave a jolly roar that made the house rock. "Oh, I recollect it all!" he shouted down the chimney. "It was the day when the shoemakers removed from their old guildhall into their new building, and brought their signboards with them. Rich and powerful were the shoemakers in those old days, and their procession was a sight worth seeing.

"They had a clown to clear the way—a comical figure with a black face and clothes made out of a patchwork of colours. How the crowd laughed as he struck right and left with his great bladder! I don't see such frolic nowadays. Behind the clown came the musicians; they were followed by the banner-bearers with the great silk banner of the shoemakers, adorned with a large black boot and a two-headed eagle.

"Mounting the scaffold where the signboard was to be put up, the chief shoemaker began to make a speech. But the clown jumped up beside him, and the people roared at his grimaces. Joining in the fun, I rattled every signboard, and the speaker got down, saying: 'It is no use trying to talk in this wind. Let us put up the signboard.'

"But I was resolved," chuckled the Wind, "that the signboard should not be put up. I blew the shoemakers' aprons over their eyes; I upset their ladders; I carried away their wigs and hats. At last they gave over struggling with me, and went to feast in their new hall.

"I was bent on mischief. Having got the best of the shoemakers, I thundered up and down the streets, trying to think of some new prank. I began unroofing old houses, and the air was filled with falling tiles. In the night, a wilder piece of mischief-making occurred to me.

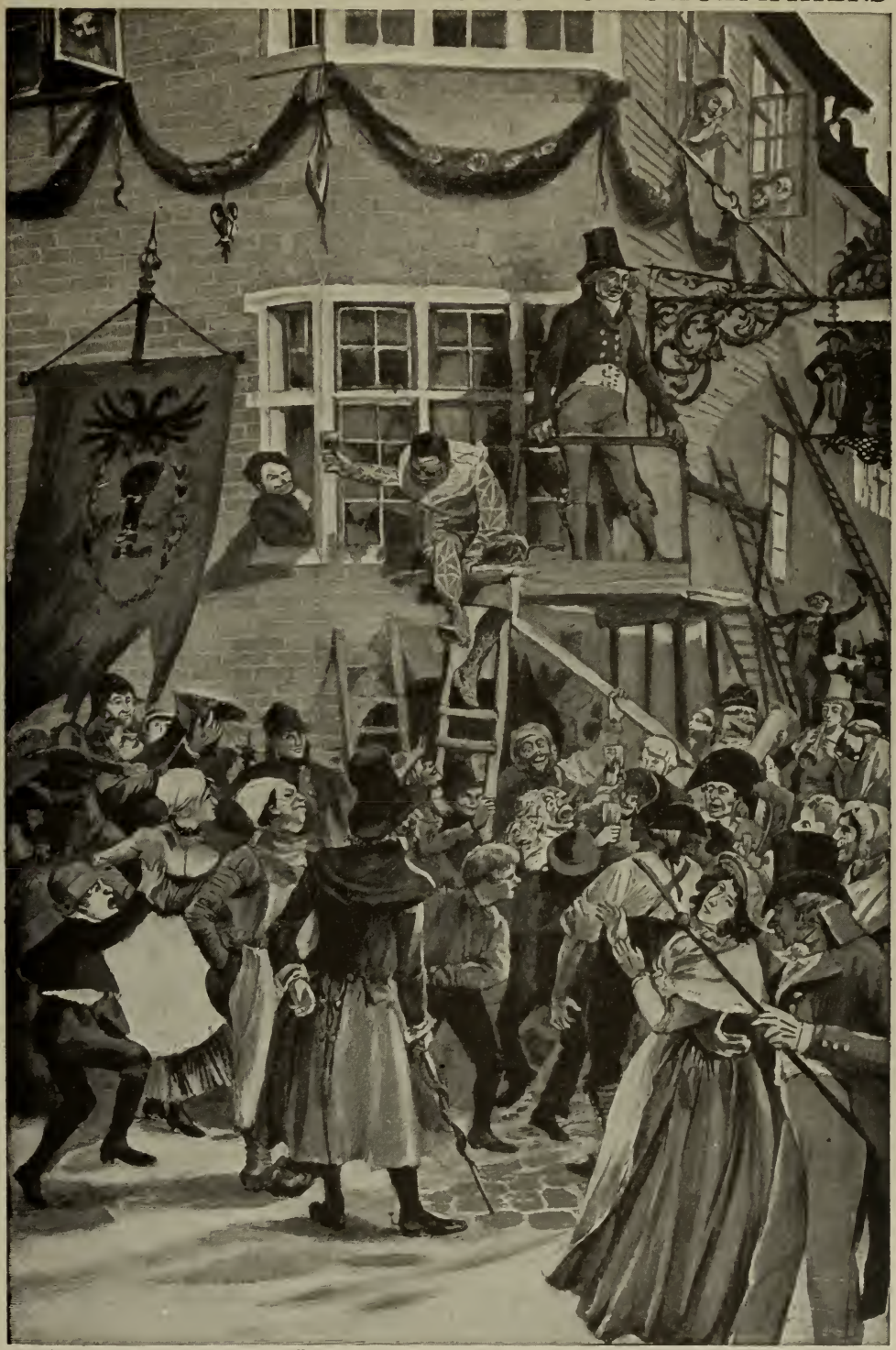
"I got among the signboards and rearranged them. Though I say it myself, the work was performed with wit and skill. When the townspeople woke up the next morning, they found that the inscription 'The Institute for High Education' had been blown on to the billiard club. The Institute got in exchange a signboard taken from the day-nursery: 'Children Reared by the Bottle.' A good-natured furrier had a fox painted on his signboard. This I carried across the street, and put it on a house occupied by a hard, cunning councillor, who pretended to be a saintly person. That made the townspeople laugh; and so did the sign which I stuck in the railings of the judge's residence. It was the barber's pole with the wooden razor. 'The razor' was the nickname that the judge's wife had earned through her cutting tongue.

"But the best joke of all," whispered the Wind, "was the trick I played on the scandal-monger of the town—a rich old woman who was always listening for tales against her neighbours. I stuck over her door a notice torn from a building site: 'Rubbish may be shot here.'

"They were merry days," sighed the Wind, "but they never put the signboards up again after I got among them. They pretended it was dangerous, but the fact was that I made some of the people so ashamed of themselves that they did not like to be reminded of my merry trick."

With that the Wind ceased to talk down the chimney, and with a whistle blew away out into the open country.

THE WONDERFUL PROCESSION OF SHOEMAKERS



The chief shoemaker mounted the scaffold where the signboard was to be put up, and began to make a speech. But the clown jumped up beside him, and the people roared at his grimaces. Then the Wind joined in the fun and rattled every signboard in the street, and the speaker got down, saying "It is no use trying to talk in this wind."

STORIES FROM THE CHINESE

It is the ambition of every family in China to have at least one boy who shall distinguish himself in the examinations through which their public officials are chosen, and Chinese story-books are full of interesting tales of the cleverness and perseverance of studious boys.

THE BIG JAR OF WATER

A LITTLE boy named Kwang, who was very clever because he always paid attention to his lessons and tried to understand everything that came in his way, was playing with some other children, when one of them fell into a large earthenware jar full of water. The vessel was a tall one, and none of the children could reach their comrade, who would certainly have been drowned had it not been for the wisdom of Kwang. He knew that anyone trying to save the boy through the mouth of the jar would not only be unsuccessful, but would probably himself fall in, and be drowned. So Kwang took up a large stone lying on the ground, and throwing it at the earthenware jar with all his might, broke the vessel. The water at once ran out, and the little boy was saved.

THE BALL IN THE HOLLOW POST

IN a little village lived a boy named Yenfoh, who was very bright and clever, and always knew what to do in difficult circumstances. One day, while he was playing at ball with some companions, the ball struck the top of a hollow post, and then fell to the bottom inside, quite out of reach of the children. All of them, with the exception of Yenfoh, thought the ball was lost. But he knew what to do. He ran to the village well and drew a pail of water. Then, bringing this to the hollow post while the other children looked on in wonder, Yenfoh poured the water in, and the ball floated to the top, where it could be reached.

THE BOY WHO FOUND LIGHT

IN the country parts of China the people are very poor—so poor that they are unable to have a light after dark, and simply have to go to bed. A boy named Kang, who was studying for the examinations, found that if he was to succeed he could not waste all the hours of darkness. His family, however, were too poor to buy oil, so what was he to do? A heavy fall of snow had taken place, and Kang suddenly remembered that white reflects light; so going out and sitting upon the cold ground, he held his book so that the light from the snow shone upon the page. This he did all through the winter. But at last summer came, and at the same time the snow went. What could poor Kang do now? He remembered that glow-worms give a tiny light, and so he collected a large number of these little creatures, and by the light which they gave was able to continue his studies far into the night. Kang became a mandarin of high rank.

THE BOY WHO HAD NO PAPER

A LITTLE boy who had the misfortune to lose his father when he was only four years old wanted to study for the examinations; but his mother lived in great poverty, and was quite unable to buy paper or pen and ink for him. The little boy, whose name was Yang-su, was greatly distressed at this, and for some time did not know what to do. He certainly could not study if he was unable to write, and how could he write if he had no paper? But it was soon proved in the case of Yang-su that where there is a will there is a way. The boy lived near the seashore, and going down to the beach he took with him a branch of a tree, and with it wrote down words and worked out his problems upon the sand.

THE SLEEPY STUDENT

IN the province of Tsu lived a boy who was very anxious to distinguish himself in the examinations, and thus to bring honour to his parents and his native village. But he found that, after he had been studying for some hours, he began to get very drowsy, and his head would nod until finally he fell asleep. This distressed him very much, and for some time he did not know what to do to keep awake. At last he thought of a way of doing this. He tied a cord to the end of his pigtail, and then fastened this to a beam in the roof, so that when he slept and his head began to nod, the pull of the pigtail at once roused him up again.

THE WEB OF CLOTH

MENCIUS was only three years old when he lost his father, but his mother worked very hard so that her son might have a good education. She sent him to school, and at first Mencius liked going; but he soon slackened in his studies, and at last, throwing aside his books, he left the school and went home. His mother

was weaving a piece of cloth into which she had put a great deal of hard work, and which was worth a large sum of money. As soon as she saw Mencius walk into the house, she took up a knife and cut the web of cloth from top to bottom, utterly spoiling it.

" My son," she said, " you are not half so sorry to see me cut this web of cloth as I am to see you leaving your studies."

Mencius was so moved by this action of his mother that he went back to school at once and always studied very hard.

THE HOLE IN THE WALL

A POOR boy named Kwang Hung was very fond of books, and loved to study; but his poverty prevented him from being able to purchase oil for his lamp, and he had no light. He worked for a magistrate, who at Kwang Hung's own request paid him in books instead of money, and no one was ever more delighted with his wages. Yet the books were of little use to the boy, for he was too poor to buy oil for a lamp at night.

At last he thought of an idea. His next-door neighbour had lights, and so Kwang Hung made a little hole in the wall, and by moving his book backwards and forwards in front of the hole he caught the light that came through the hole, and was able to go on with his studies.

When the examinations were held he went up with others, and so distinguished himself that his case was brought before the emperor, who gave him a high appointment, and finally Kwang Hung became Prime Minister of the Chinese Empire.

THE ROSY APPLE

IT was a cold winter afternoon, and snow covered the whole town in a mantle of white. The great cathedral clock tolled five, and a little ragged urchin, cowering in the shelter of the door, gazed up at the big tower, and wondered what the bell must look like. But the cold wind blew so cruelly among his rags that he shrank back into the doorway again, glad of any shelter from the biting cold.

At this moment the great doors were thrown open, and Hans, who was a little German boy, and lived in Strassburg, knew that men and women would now come to the church to pray.

He had often peeped in wonder through the doors, and had seen in the distance the pretty glittering candles, the beautiful figure of the Mother of Jesus, and the white-robed priests kneeling at the altar.

Then, too, he had heard the organ and the voices of the choir, and they never failed to fill him with a great wonderment and a longing to learn more about it all. If only his clothes had been a little less torn he would have dared to venture in, for he had often seen quite poor people do so; but, alas! he was clothed in rags, and he had not even a cap on his head or boots on his feet.

So he stood in the corner by the door, and watched the people pass in, as he had often done before.

Many of the ladies had long fur coats, and nearly all the men had big, warm collars and mufflers. Hans wondered what it would be like to have thick clothes, and not to feel a little bit cold or hungry. Poor little chap, he could not imagine that, for his limbs ached with cold, and he had scarcely eaten for two days. As he was watching the crowd, a beautiful carriage drew up, and Hans saw a little girl, who was seated in it, look at him, and then turn and speak to a lady who was with her. The lady handed her something from a basket, and then the coachman opened the door and they both stepped out.

Oh, how beautiful they were, and especially the dear little girl! Poor Hans opened his eyes in astonishment, and almost thought that she must be a fairy. Her coat was of pretty white fur, and she had a little cap and muff of the same material. Around her face fell golden curls, and on her little feet and legs she wore white boots and gaiters.

As they came up the steps, Hans saw that in her hands she carried a big, rosy apple; but when they reached the top he could hardly believe what he saw, for the little maid ran up to him, and, holding it out, said:

" Here, little boy, would you like this apple?" And then, before he had time to speak, she ran after the lady, and he was left standing with the apple in his own hands!

He was so astonished that he sprang forward and gazed after the two as they went into the cathedral, and there he saw the little girl kneel down by the side of her mother, as the priests began to pray.

For a long time he stood there, and once more longed with all his little heart to go in and kneel, as he saw others doing.

It was very quiet at the back of the church, and Hans at last ventured just inside the door, and into the dimly-lighted porch. He stood there a few moments, until he could resist no longer; then he suddenly shot forward and knelt down quickly against one of the chairs. He shut his little eyes and kept quite still, until at last he heard the organ begin to play, and saw that all the people were standing up.

Oh, how he listened and watched as the service went on! And as he heard the beautiful music his heart felt as if it were growing bigger and bigger, and he longed to cry, and yet at the same time he knew that he was strangely happy.

Then he saw that one of the priests was moving about the church with a golden plate in his hand, and as he held it before the people they placed money on it. Poor Hans! How he longed that he might put money on the plate, too! And as he longed a strange idea came to him—why not give his rosy apple to the good God to whom the priests were praying?

Hans did not know much about God, but he *did* know that his apple was all that he had in the world—his next meal and the only thing which had given him pleasure for ever so long. It would be hard to let it go, but he was full of a great longing, and his one fear was whether his offering was good enough.

He hugged it closely to his heart, and grew more and more excited; and then, when the priest at length drew near, he rose from his chair, and, with a frightened, happy sigh, he placed his rosy apple on the big golden plate. He thought with delight how pretty and red it looked among all the coins, and he watched eagerly as the priest carried it away. As he drew near the altar, all the people bowed their heads, while the priest lifted the plate high, and prayed that God would accept the gifts of His people.

HE COULD HARDLY BELIEVE HIS EYES, FOR SHE RAN UP TO HIM AND HELD OUT THE APPLE

Now, as he did this, a most wonderful thing happened. The pretty rosy apple, which a moment before had been held so tightly in Hans' little fingers, was turned, as the priest prayed, into pure, shining gold, and into the little boy's heart there swept a big joy that was never to leave it. His face was wreathed with glad smiles, and he was full of happiness. Of all the gifts that were laid on the plate, the little rosy apple was the greatest in the sight of the great God.

THE KING WHO COULD NOT SLEEP

THERE was a fierce and warlike young king who seemed to possess everything that the heart of man could wish. He was very rich and very powerful, and he had a great army, which he led from victory to victory. But, in spite of all his wealth and his might, he was the unhappiest man in his kingdom; his restless mind was so full of ambitious schemes that he could not sleep.

He summoned to his court the most famous doctors in the world, but none of them was able to cure him of his malady, and at last he made a proclamation that he would give half of his kingdom to any person who could make him sleep in a calm and natural manner, but he added that anyone who tried to cure him and failed would be imprisoned.

One evening a pretty little shepherdess came to his palace and said that she could heal him. In spite of the anguish he was in, the king looked at her with pitying eyes.

"Return home, my pretty child," he said. "You cannot possibly succeed where all the wisest doctors have failed."

"No! I cannot go away," said the little shepherdess, "until I have done my work—until I have tried to save you."

"Well, before you try," said the king, "tell me what your remedy is. Some simple thing that your mother taught you, no doubt."

"Yes," she replied. "It is something my mother taught me. Here it is."

And leading the king to an open window, she pointed up to heaven.

"What! You have come to mock me?" said the king.

"No!" said the little shepherdess. "I have come to teach you to pray."

But the king still thought she was mocking him, and growing harsh with anger, he called in his soldiers, and ordered them to put the girl in a dark dungeon. Sitting in a chair, he watched in a fierce mood the warders bind the shepherdess in fetters. But his heart was touched when he saw the sweet and innocent child walking to the dungeon with a smile upon her bright and lovely face. He followed her, and saw her kneel down and pray when she entered the prison.

"Kind and loving Father," she said, "teach him to pray to Thee with a humble heart for forgiveness for his sins, so that he may lie down at night with peace and happiness in his soul."

HIS HEART WAS TOUCHED WHEN HE SAW THE INNOCENT CHILD WALKING TO THE DUNGEON

Then she remained with her head bowed in silent prayer, and the king sprang to the door of the dungeon, and cried to the warders :

" Unbind her ! Set her free at once and let her depart ! "

The king then returned to his room, and knelt down by the side of his bed, and clasped his hands, as he had seen the shepherdess do in the dungeon. No words, however, came from his lips, for he had forgotten the prayers which his mother had taught him. But he must have prayed inwardly, for when he lay down he fell asleep, and he woke up the next morning a changed and better man. He no longer thought of war and wealth and power, but considered how he could make his people happy.

" Oh, if only I had my little shepherdess to help me," he exclaimed, " how much good I could do ! "

He at once sent his messengers out to find the little girl, but none of them was able to discover where she was. The king was greatly disappointed ; but having learnt to pray, he was now able to sleep, and he soon recovered the strength and beauty of his youth. Under his mild and skilful rule, his people became the happiest in the world, and one day a very beautiful young lady entered his palace, and said to him, with a winning smile :

" Have you forgotten me ? I am the little shepherdess."

" I knew you at once, my darling," said the king in great joy. " I have been longing for you to come and claim your share of my kingdom. Oh, if only you would be queen and help me to make my people happy ! "

" That is just what I should like to do," she replied. " But you will let my mother live in the palace with me, won't you ? It was she who taught me how to cure you, by saying to me every night : ' Don't forget to say your prayers, my child, if you wish to sleep in peace and have happy and pleasant dreams.' "

THE LOVE THAT WAS WORTH NOTHING

KING FRANCIS of Germany sat one day in his lion garden, waiting for the animals to come in and fight. All round him were the nobles and ladies of his court.

The king nodded his head. A gateway opened below, and a great tawny lion sprang into the ring. Looking round, and lashing its tail, it laid itself down in the centre.

The king nodded again. A second gateway was opened, and a magnificent tiger appeared, and roared when it saw the lion. After prowling hungrily round the ring for a while it laid itself down, a little way from the lion.

SUDDENLY A LITTLE GLOVE FELL

Again the king nodded. Two leopards rushed out and sprang upon the tiger, who knocked them away with one pat of its great paw. For a while the whole air was filled with their roaring. Then it died away as the leopards slunk off to a far corner of the ring, awaiting a better chance of springing upon the tiger.

As the nobles held their breath waiting for the fighting, suddenly a little glove fell from one of the balconies, right between the lion and the tiger. A noble's beautiful daughter turned to the knight beside her.

" Now, Sir Knight," she said laughingly, " if your love is as strong as you are for ever telling me it is, bring me back my glove."

The knight looked at her. Then, almost before anyone quite knew what had happened, he sprang from the balcony, and quick as lightning had the glove in his hands. The animals sprang to their feet, but they were too late.

A cheer went up, and everyone crowded round to praise him and to see him present the lady with her glove. She could not refuse to give herself to him in marriage, they thought, after he had done such a brave deed for her.

The knight bowed very low.

" If for your pleasure you can expose me to such unnecessary danger," he said, " I neither value your love nor want it."

And he threw the glove straight in her face, and left her presence for ever.

STORIES TOLD TO KAFFIR CHILDREN

The little Kaffir boys and girls who live in the native villages of South Africa do not know any of our fairy tales ; they have never heard of Cinderella or Little Red Riding Hood. But in the evening, squatting round the fires that blaze outside their huts, their mothers tell them tales like these stories, and they become silent and attentive.

UNCAMA'S ADVENTURE

UNCAMA was a bold hunter, and finding that a strange animal came every night to his garden and rooted up his plants, he lay in wait for it, and pursued it. The strange animal ran down a great

UNCAMA FOLLOWED IT DOWN THE HOLE

hole by the side of the river, and Uncama followed it, and entered a wonderful country underneath the earth.

The strange animal then disappeared, but Uncama went on until he came to a village in which a tribe of savage dwarfs lived. The dwarfs were very fierce, and gathered together to make an attack ; but Uncama got away, and climbed up the hole back to his own country.

But when he returned to his people no one recognised him.

" Where is the wife of Uncama ? " he said. " I have a message for her."

" Uncama ? Uncama ? " exclaimed the people. " Wasn't that the man who disappeared many years ago ? His wife is now a very old woman."

So, indeed, she was ; and for some time she did not know Uncama. The hunter was now a younger man than even the baby son whom he had left in his wife's arms when he followed the animal down the hole into the underground country.

THE JACKAL AND THE LION

ONE very hot summer all the streams dried up, and the animals had no water to drink. After searching for some days they found a spring, but hardly any water came from it, as the hole had not been dug deep enough in the earth.

" Let us all set to work and dig out a big hole," said the lion, " so that we can get plenty of water to drink."

The jackal was lazy, and refused to work with the other animals. So, when they had dug the spring out, they said :

" We must now guard our fountain, and keep the jackal from drinking any of our water, since he refused to work."

" I'll watch over it," roared the lion, " and if I set my eyes on that rascal of a jackal, I'll eat him up."

Some time afterwards the jackal came bounding gaily up to the spring. But, instead of trying to drink the water, he sat down near the lion and pulled from a bag a luscious piece of honeycomb.

" You see, Mr. Lion," he said, as he munched the honeycomb, " I am not at all thirsty. This honey is really lovely."

" LET US ALL SET TO WORK," SAID THE LION

" Just give me a taste," said the lion.

The jackal gave him a very little bit.

" Oh, it is very good ! " said the lion. " Do give me some more, my friend."

" To get the full flavour," said the

jackal, " you must lie on your back, and let me pour it down your throat."

The lion at once fell on his back, and began to wave his great shaggy paws in delight at the fine feast in store for him.

HE TIED UP THE LION'S PAWS WITH ROPE

" I am afraid you will hurt me with those great paws of yours," said the jackal. " Let me tie them up, and then I can lean over you and pour the honey down safely."

The lion allowed him to tie up his four paws with pieces of strong rope. But instead of giving him any of the honey, the jackal trotted to the spring and drank his fill of the water. As he was merrily running off home, the lion roared out : " Mr. Jackal ! Dear Mr. Jackal, don't leave me lying helpless here with my feet tied up. All the other animals will laugh at me, and I shall lose my authority over them. On the honour of a lion, I will let you have as much water as you like if only you will set me free."

The jackal reflected for a few minutes. If he did not unbind the lion someone else would, and the king of beasts then would never rest until he had avenged himself. It was better to trust in his honour. So the jackal set the lion free and gave him some of his honey, and the lion ordered all the other animals to allow the jackal always to drink at the new spring which had been made.

THE JACKAL'S TRICK

After the jackal and the lion became friends they often used to go out hunting together. But, fearing that their friendship would not last very long, the jackal left his den and made a house for his wife and children on the top of a very high rock. This he used to climb up by means of a long rope, which his wife let down for him when he arrived from his travels and gave the necessary signal.

The lion, of course, always took a lion's share of everything that he and the jackal captured. This sometimes made the jackal angry, especially when he discovered the game and tracked it down, and the lion merely came and killed it. And the lion got so lazy that he would not even take the trouble to carry home his share.

" Take all the best parts to my lair," he used to say, " and then you can come back and have the worst parts for yourself."

The jackal resolved to pay the lion out for this. And one day, when they had brought down a splendid lot of game, the jackal took all of it home to his own wife. The next morning the angry lion came to the foot of the rock, and said :

" Just throw down your rope. I want to come up and have a friendly talk."

THE JACKAL BECAME VERY ANGRY

The jackal's wife and children were all very frightened when they heard the lion's voice, and they began to tremble, for they knew their fate if the lion came up. But the cunning jackal had thought out what he would do. Calling out to the lion that he would lower a rope, he let down a piece of weak cord, which broke in the middle just as the lion had got half-way up, and down fell the lion and was killed on the rocks.

THE NEXT BOOK OF STORIES IS ON PAGE 5419.

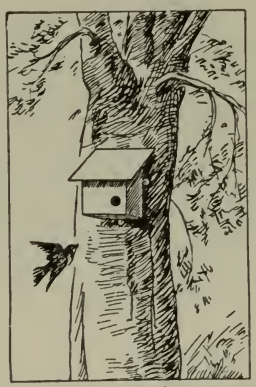
NESTING-BOXES CONTAINING EGGS AND YOUNG BIRDS

A HOME FOR THE BIRDS

CONTINUED FROM PAGE 5295.

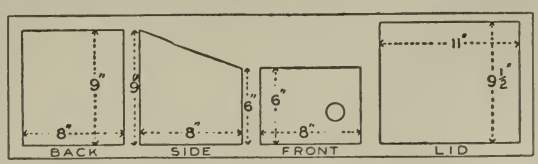
To the boy or girl who is a lover of Nature there are few more enjoyable hobbies than that of putting up nesting-boxes for the birds, and then, when the birds have made their nests in the boxes, paying a daily visit to see how they are getting on hatching and bringing up their little family. There are few gardens where we cannot entice the birds to nest in a little box placed on a tree or a wall for their convenience, and the cost of erecting nesting-boxes is practically nothing.

First of all as to the boxes. These may be of the simplest and roughest kind, provided they are weather-proof. A small box from the grocer's may be cut down, but if we wish to make a nesting-box the best form is as follows: Take a piece of wood 8 inches by 9 inches, as shown in the lower picture This is for the back of the box. Then cut two pieces for the sides, 9 inches high on one side and 6 inches on the other, by 8 inches wide; a piece 8 inches by 6 inches for the front, and a piece for the bottom. The exact size of this bottom piece will depend upon the thickness of the wood used. Thus, if we use wood a quarter of an inch thick—which is a very good thickness—the bottom must be 8 inches by 8½ inches. With thin nails fasten the two sides to the back, and then nail the front into position. Now fix on the bottom We next want a piece of wood, 11 inches by 9½ inches, for the lid. This is hinged on at the back of the box in such a way that it is flush at the back, but reaches out beyond the box all round on the other sides. The edge of the lid at the back must be bevelled off to allow of its being opened. Before putting in the front we should make a round hole, varying in size according to the birds we wish to nest in the box. For small tits the hole should be not more than 1¼ inches in diameter; for great tits, robins, nuthatches, and fly-catchers it should be 1½ inches; and for larger birds like starlings, 2 inches in diameter.



NESTING-BOX IN POSITION

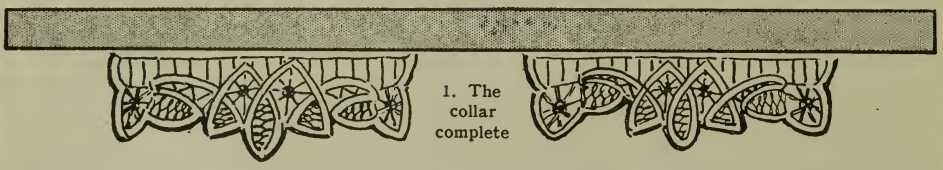
We must now decide where to fix the box. If possible, the box should face north or east, and it should be fastened firmly by a nail, screw, or hook to a tree or wall, out of reach of cats and other creatures that prey on birds and their eggs. A good height up to fix the box is from 8 feet to 12 feet, and if it is on a tree it is well to fasten round the tree a broad band of zinc, which will prevent cats and other enemies from climbing up. The sloping roof will allow the rain to run off, and will prevent cats lodging on the top and catching the birds as they go in or out. In a single garden, not very many miles from London, different nesting-boxes were occupied by redstarts, great tits, blue tits, coal tits, nuthatches, tree sparrows, house sparrows, starlings, and wrynecks. The birds, as soon as they have selected our box for a nesting-side, begin to build their nest. Then the hen lays her eggs, and while she is sitting upon them we may once or twice a day open the lid at the top and have a peep; but we must be careful not to disturb the bird too much. Then, after a time, the birds are hatched, and we can watch them until they are strong enough to fly away. It must be remembered that birds usually come year after year to the same spot to make their nests.



HOW TO CUT THE WOOD FOR A NESTING-BOX

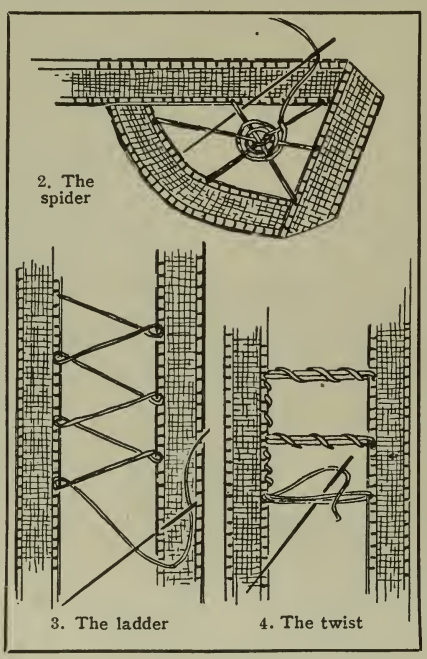
HOW TO MAKE A BRAID LACE COLLAR

BRAID lace is made of a special kind of braid, which is joined into a pattern held together by fancy stitches. We must learn first what kind of braid to use, then how to form it into the required pattern, and afterwards how to make the fancy stitches which join it all together.



1. The collar complete

To begin with, the braid itself can be obtained in many different widths, and in several shades of cream and white. There are plain and fancy braids, and we can buy any of them by the yard for a few cents. The pattern of braid lace has to be specially designed to fit the article it is used for. For a "stock" collar it is better to have as few joins as possible in the braid itself, so we will notice the pattern given here, and observe the double lines which show where the braid comes. We shall see that they can be followed from the start—at the place marked A, in picture 5—all through the pattern, and right back to the same place again. This allows us to have one piece of braid for the pattern, and only one join. Now, we must trace off this pattern, and transfer it to a piece of moss-green linenette, about 7 inches square. This is easily done with the aid of a piece of ordinary tracing-paper. Then lay the pattern on the green linenette, and, with a piece of carbon-paper in between, go over the lines with a pencil. If necessary, we can easily ink over the lines on the linenette afterwards, to make them clearer. The braid to use for this is a plain point braid, known as D.M.C. No. 6, and we shall want about $\frac{3}{4}$ yards. We shall also need a small skein of special lace thread, No. 35 or 40, a medium-sized needle, and some scissors. First, we must tack the braid down its centre, along the lines of the pattern, on to the linenette. Picture 6 shows us how to arrange carefully the corners of the braid, which should be held with the fingers of the left hand while tacking. Then sew the overlapping corners very neatly with a few tiny stitches with a separate thread — the stitches must not go through to the linenette, of course. When tacking the braid round a curve, we should be careful to keep the tackings to the outer edge—or the widest part of the curve—to allow the braid to lie in neat, even puckers on the inner edge. These inner edges have now to be "whipped up" to fit the curves by making small overcasting stitches in the edge of the braid, and drawing it up exactly to fit the pattern. We must use the linen lace thread for this, and be careful not to take the stitches through the green linenette. We should always finish off a thread with an invisible buttonhole stitch before cutting it off; this will prevent its coming undone, and looks quite neat.

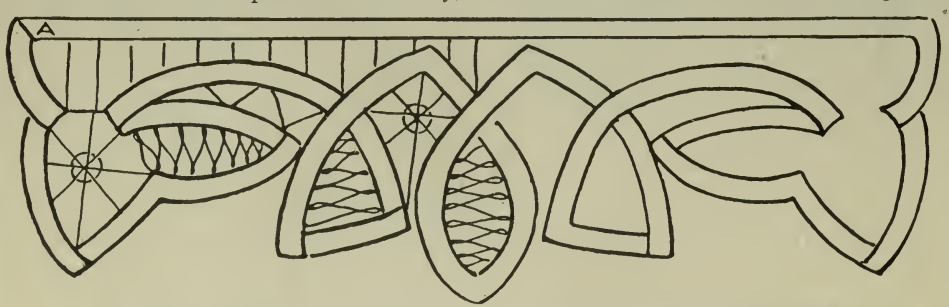


2. The spider

3. The ladder

4. The twist

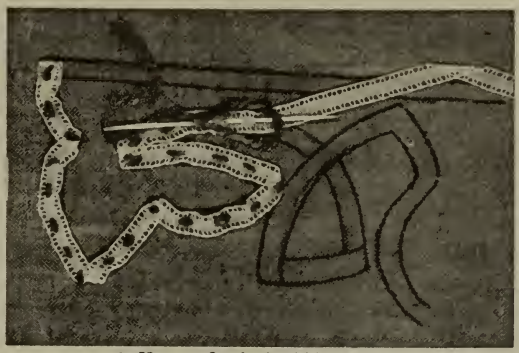
Now we come to the stitches for the filling. To begin with, they must never be drawn so tightly as to drag the braid out of shape, nor should the stitches be taken through the green ground, but only rest upon it. Let us remember that it is the *tacking threads* only which go through the green linenette. When our lace is finished, these tacking threads are



5. The pattern for the collar, showing how the design is made and the braid held together

removed and our lace comes away, dainty and quite transparent, while the pattern remains for the second half of our little turn-down collar.

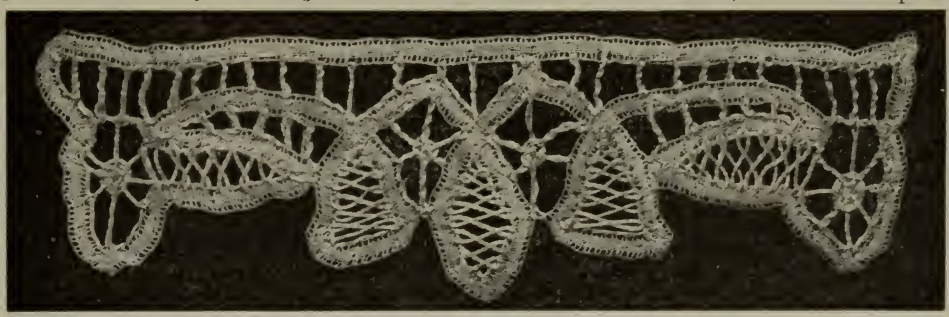
The fancy stitches are made with our needle and thread, and form the most fascinating part of the lace, as they fill the spaces in between the braid. There are a great many of these filling stitches, but we are only going to learn how to do three of them—the "twist," the "ladder," and the "spider" stitch. For the twist, make two crossway foundation threads from side to side of the braid, and overcast them loosely, as shown in picture 4. To reach the next twist, take three small whip stitches along the edge.



6. How to fix the braid in position

For the ladder, pass the needle from left to right under the edge of the braid, then again from right to left under the opposite edge. Look at picture 3 on page 105. The spider stitch is really a darning stitch worked on twisted bars. We make the bars of the "twist," and start the darning stitch where they cross in the centre, going under and over about six times round. Then we take the thread to the braid again with a couple of stitches over a twist, and fasten it off with a buttonhole stitch on the edge of the braid. Picture 2 makes this quite clear. In picture 5 we see in which spaces the various stitches are to go.

When taking a fresh needleful of thread we should keep the knot, of course, on the wrong side of the braid—and let it be a very tiny knot indeed. It matters very little which stitch we do first, but perhaps the bars along the top, which are made of the "twist," make the best beginning. Then we can fill in the ladders and the four spiders. Then we untack the lace, press it on the wrong side with a warm iron, and put it away while we do the other side of our collar, which is made in exactly the same way. To complete it we shall need a strip of cambric, about 14 inches long by 2 inches wide. This is folded into a strip to form the neckband of the collar, and the two pieces of lace are sewn to it very neatly, as shown in picture 1. Picture 7 shows how the lace looks when untacked from the linenette, and picture 5 gives the finished pattern, exact size.

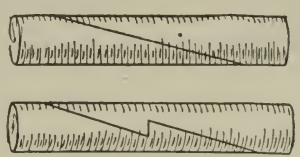


7. The finished pattern, showing braid held together by fancy stitches

TWO WAYS OF SPLICING A STICK

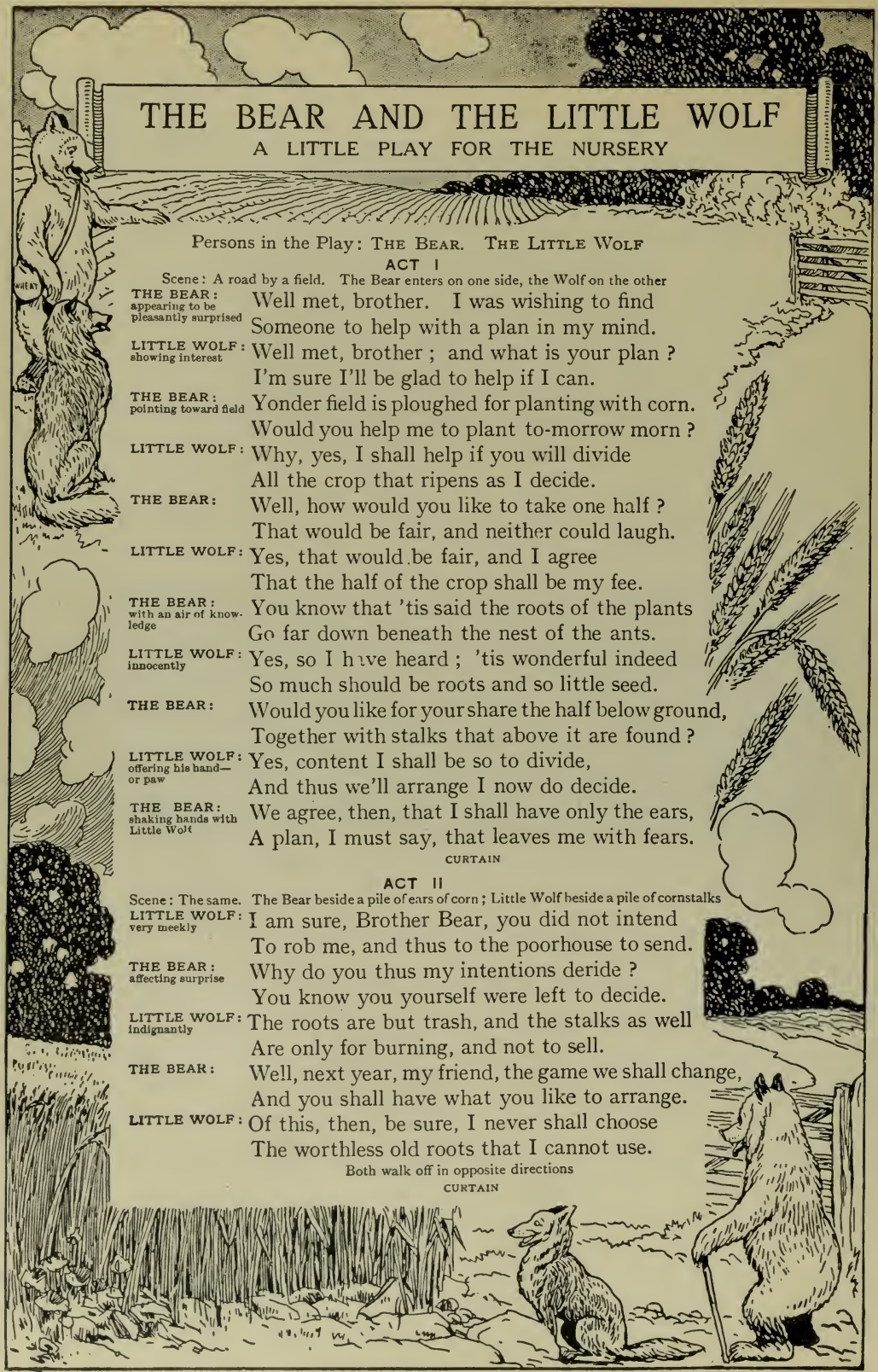
Every boy ought to know how to splice a stick or a pole, and as the method to be followed is quite simple, there is no reason why anyone need be unable to do this very useful work. By proper splicing, poles may be lengthened, broken sticks mended, and other pieces of wood extended to a required length.

The simplest method, though the result is not the best and strongest, is to make a straight splice, as shown in the top picture. The two ends to be joined are cut to a sharp angle, and made to fit exactly upon one another. Then, if we are handling a pole or a beam, the two portions are bolted together, while if it is a stick or a thin pole, instead of bolting the pieces, we glue or screw them to one another. The best method of splicing, however, and by far the strongest, is that known as the bracing splice. It is rather more difficult than the straight splice, but the extra trouble is well worth while, especially if there is to be much strain upon the jointed pole or stick. Instead of there being a straight, slanting cut at the end of each portion, a kind of step is cut in each piece, and the two portions then fit each other exactly, as shown in the bottom picture. They may be fastened together by having wire bound round, if the pole is a thick one, or by using glue if we are splicing a stick.



Two ways of splicing a stick

If we are splicing a new piece of wood to some article, and the new wood needs shaping to match the old, the splicing should always be done first, and then the new portion can be worked to whatever shape may be required.



THE BEAR AND THE LITTLE WOLF

A LITTLE PLAY FOR THE NURSERY

Persons in the Play: THE BEAR. THE LITTLE WOLF

ACT I

Scene: A road by a field. The Bear enters on one side, the Wolf on the other

THE BEAR: (appearing to be pleasantly surprised) Well met, brother. I was wishing to find
Someone to help with a plan in my mind.

LITTLE WOLF: (showing interest) Well met, brother; and what is your plan?
I'm sure I'll be glad to help if I can.

THE BEAR: (pointing toward field) Yonder field is ploughed for planting with corn.
Would you help me to plant to-morrow morn?

LITTLE WOLF: Why, yes, I shall help if you will divide
All the crop that ripens as I decide.

THE BEAR: Well, how would you like to take one half?
That would be fair, and neither could laugh.

LITTLE WOLF: Yes, that would be fair, and I agree
That the half of the crop shall be my fee.

THE BEAR: (with an air of knowledge) You know that 'tis said the roots of the plants
Go far down beneath the nest of the ants.

LITTLE WOLF: (innocently) Yes, so I have heard; 'tis wonderful indeed
So much should be roots and so little seed.

THE BEAR: Would you like for your share the half below ground,
Together with stalks that above it are found?

LITTLE WOLF: (offering his hand—or paw) Yes, content I shall be so to divide,
And thus we'll arrange I now do decide.

THE BEAR: (shaking hands with Little Wolf) We agree, then, that I shall have only the ears,
A plan, I must say, that leaves me with fears.

CURTAIN

ACT II

Scene: The same. The Bear beside a pile of ears of corn; Little Wolf beside a pile of cornstalks

LITTLE WOLF: (very meekly) I am sure, Brother Bear, you did not intend
To rob me, and thus to the poorhouse to send.

THE BEAR: (affecting surprise) Why do you thus my intentions deride?
You know you yourself were left to decide.

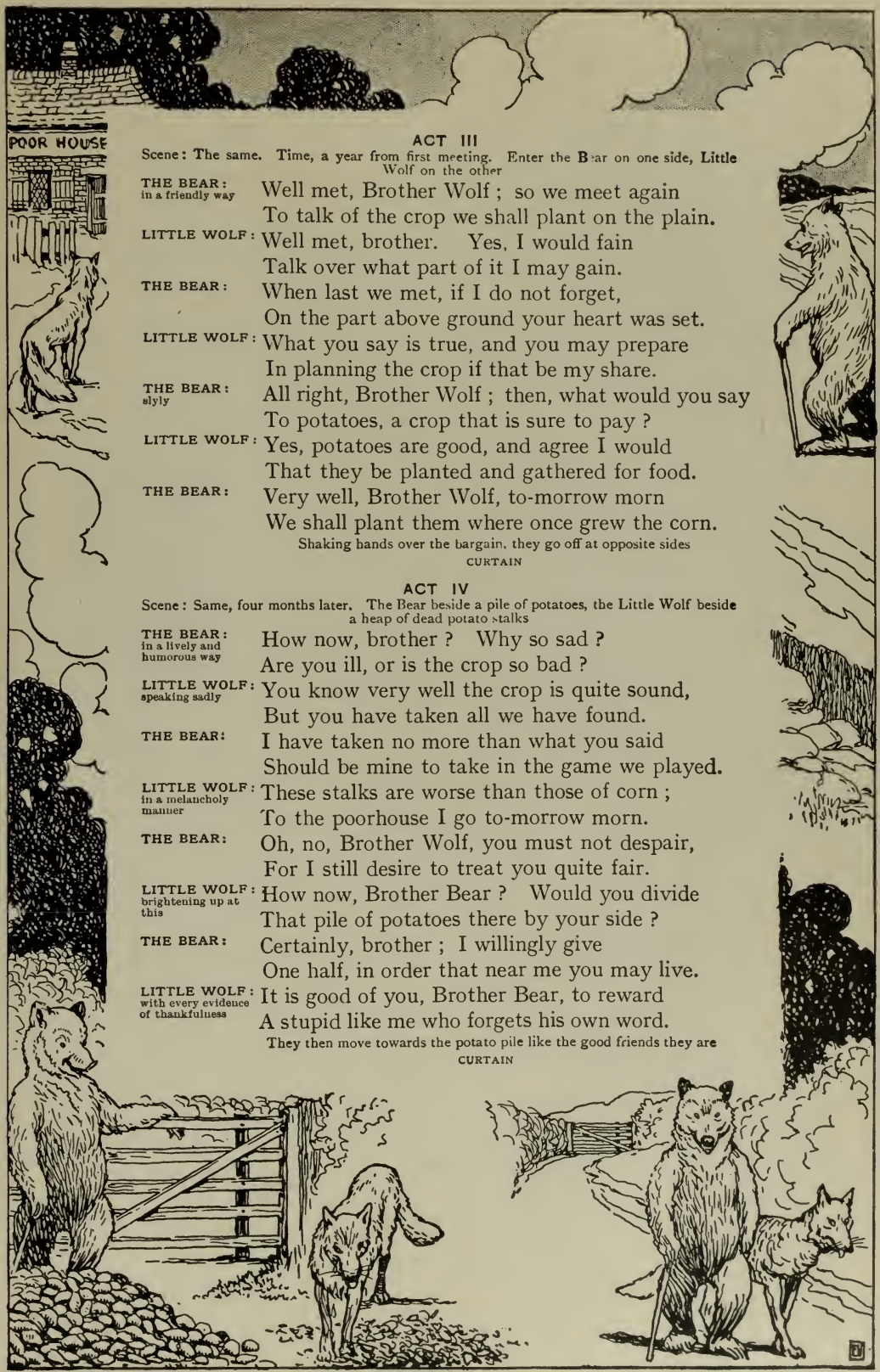
LITTLE WOLF: (indignantly) The roots are but trash, and the stalks as well
Are only for burning, and not to sell.

THE BEAR: Well, next year, my friend, the game we shall change,
And you shall have what you like to arrange.

LITTLE WOLF: Of this, then, be sure, I never shall choose
The worthless old roots that I cannot use.

Both walk off in opposite directions

CURTAIN



ACT III

Scene: The same. Time, a year from first meeting. Enter the Bear on one side, Little Wolf on the other

THE BEAR: (in a friendly way) Well met, Brother Wolf; so we meet again
To talk of the crop we shall plant on the plain.

LITTLE WOLF: Well met, brother. Yes, I would fain
Talk over what part of it I may gain.

THE BEAR: When last we met, if I do not forget,
On the part above ground your heart was set.

LITTLE WOLF: What you say is true, and you may prepare
In planning the crop if that be my share.

THE BEAR: (slyly) All right, Brother Wolf; then, what would you say
To potatoes, a crop that is sure to pay?

LITTLE WOLF: Yes, potatoes are good, and agree I would
That they be planted and gathered for food.

THE BEAR: Very well, Brother Wolf, to-morrow morn
We shall plant them where once grew the corn.

Shaking hands over the bargain, they go off at opposite sides

CURTAIN

ACT IV

Scene: Same, four months later. The Bear beside a pile of potatoes, the Little Wolf beside a heap of dead potato stalks

THE BEAR: (in a lively and humorous way) How now, brother? Why so sad?
Are you ill, or is the crop so bad?

LITTLE WOLF: (speaking sadly) You know very well the crop is quite sound,
But you have taken all we have found.

THE BEAR: I have taken no more than what you said
Should be mine to take in the game we played.

LITTLE WOLF: (in a melancholy manner) These stalks are worse than those of corn;
To the poorhouse I go to-morrow morn.

THE BEAR: Oh, no, Brother Wolf, you must not despair,
For I still desire to treat you quite fair.

LITTLE WOLF: (brightening up at this) How now, Brother Bear? Would you divide
That pile of potatoes there by your side?

THE BEAR: Certainly, brother; I willingly give
One half, in order that near me you may live.

LITTLE WOLF: (with every evidence of thankfulness) It is good of you, Brother Bear, to reward
A stupid like me who forgets his own word.

They then move towards the potato pile like the good friends they are

CURTAIN

HOW TO KEEP A HISTORY NOTEBOOK

We have from time to time learnt much of the world's history. How can we fix in our memories the order in which the nations rose and fell, and marshal the procession of mighty men through the centuries?

Here is a simple plan which many have found useful and interesting.

Let us take an ordinary exercise-book and rule a thick, black line down its middle opening. Along the line let us write: Time of the Birth of Christ. Then let us head twenty pages after the line thus: 1st century A.D., 2nd century A.D., up to 20th century A.D., reflecting that each page stands for 100 years.

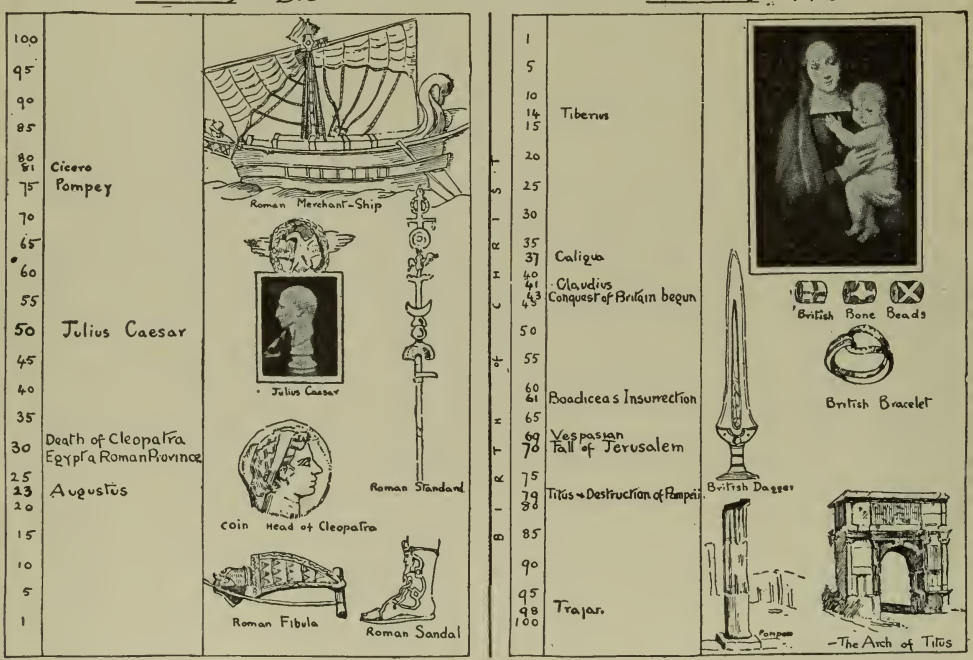
Perhaps before going any farther we may like to jot down a few entries in the centuries to which they belong, such as Edward VII., near the beginning of the twentieth century; the opening of the first railway in America upwards, because time is reckoned backwards from the birth of Christ, and 100 B.C. is an earlier date than 1 B.C. If any difficulty is felt about this, we can number a few of the B.C. centuries, taking care that 50 comes about the middle of the page, and 75 and 25 at the first and last quarters.

Let us fill in a few of the names we know well, passing backwards into the mists of time.

We have Julius Cæsar in the middle of the 1st century B.C.; Alexander in the last quarter of the 4th; the soul stirring names of Marathon and Thermopylæ in the beginning of the 5th, and so on.

Many of the century pages in the long stretch of years will remain empty of names, even after we have read many books and studied in many museums. From time to time, too, we may have to make changes in our

TWO PAGES FROM THE HISTORY NOTEBOOK



before the middle of the nineteenth century; the French Revolution towards the end of the eighteenth; England a commonwealth in the middle of the seventeenth; Spenser, Shakespeare, Francis Drake, the Armada, all in the last quarter of the sixteenth; the departure of the Romans from Britain and the arrival of the English in the fifth; the Conquest of Britain in the first; as well as notices of names and events in the rest of the world.

Next, let us turn to the centuries before Christ and head the pages before the black line, 1st century B.C., 2nd century B.C., and so on back and back till we come to the 55th near the beginning of the book. Each page, as before, stands for 100 years, and, as before, the beginning of each century is at the top of each page, though, as we are dealing with years before Christ, we number from the bottom pages, for constantly new finds of old treasures upset dates that have long been thought correct.

It adds immensely to the interest of our History Notebook if we can illustrate its pages with sketches of our own, drawn from objects in the museums or from pictures · we can also collect small pictures and fasten them on the century page to which they belong in the manner shown in the specimen pages that are given.

On the pages after the 20th century A.D. can be drawn maps of the countries in the different stages of their history, also plans of the great cities, and of the battles of the world at different stages of their progress.

If there are any spare pages at the beginning of the book, we can put in them drawings or photographs of the various prehistoric implements which belong to the distant ages before history came to be recorded in writing.

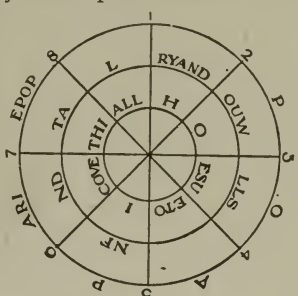
THE PUZZLES OF THE WIZARD KING

On these pages are a number of problems and puzzles of various kinds. The explanation of the puzzles that are given here, and of those that will appear in future pages of the Wizard King, is as follows: In a hidden-word puzzle the name is made up of the parts of two or more words. Example: "When il*l I lie so* comfortably in this cool, pleasant room!" The letters in italics show hidden flowers, lilies. In a *double acrostic* we write down under one another the names of the different things mentioned, and the initial letters read down from top to bottom, and the final letters read in the same way, give the names of the persons or things we have to discover. In a *single acrostic* only the initial letters spell anything In a *square word* the words forming the square read the same downwards and across. *Beheaded names* almost explain themselves. Tears, ears, is an example. In a *riddle-me-ree* my first, second, and so on, are letters. A *charade* is similar to a riddle-me-ree, only in this case my first, second, and so on, are parts of a word, not merely letters. For example, my first is a professor, *don;* my second opens a door, *key;* my whole is an animal, *donkey. Transformations* and *anagrams* are almost the same thing. An anagram is the rearrangement of the letters of a word or words, to form a new word or words, which have some relation to the old ones. The following is an example of *quaint arithmetic*: What number, from which one is taken, is even? S-even. The solutions of the puzzles appear in the next Things to Make and Do.

1. THE UNKNOWN QUOTATION

One day there came to the palace of one of the Eastern princes a poor man who was very fond of poetry. He had with him a sheet of parchment, and on it was the curious diagram shown here. The parchment had been sold to him by an old bookseller, who told him the following particulars about it:

"At each point in the diagram, or wheel, where lines cross, you must place a letter. When the proper 25 letters have been placed, the spokes will read as follows, beginning in each instance with the same letter at the centre. 1.—Greek letter. 2.—A short poem. 3.—A bird of Egypt. 4.—A metal. 5.—An image. 6.—A goddess of the ancient Egyptians. 7.—A flower. 8.—Is never found where there is no water.



"Around the tire is a quotation from an English poet, with his name. The middle circle is a sentence encouraging you to solve the problem. The innermost circle is another sentence of further encouragement."

The prince, who, as it so happened, knew most of the world's poets off by heart, solved the problem, and sent the poor man on his way rejoicing. What was the solution?

2. THE MYSTERIOUS INSCRIPTION

The following is the translation of an Arabic inscription discovered in the temple of Persepolis. It can be read in such a way as to form four moral and useful maxims.

say	know	says	knows	says	knows
spend	have	spends	has	spends	has
tell	hear	tells	hears	tells	hears
covet	see	covets	sees	wants	sees

Do not	all you	for he who	all he	often	more than he

9. BEHEADED NAME

Autumn o'er the earth has strewed
Me far and wide ;
Everywhere my form is viewed,
Sere, and dried.
Now behead, I then pertain
To all house-tops ;
Oft the welcome, welcome rain,
From me drops.
Behead again, the nuns at prayer
Us oft repeat.
Transpose—from woe and care
Relief entreat.

10. THE SQUIRREL AND THE CORN

A box has nine ears of corn in it. A squirrel removes three ears a day, and takes nine days to carry all out. Explain this.

11. THE WIZARD'S ALPHABET

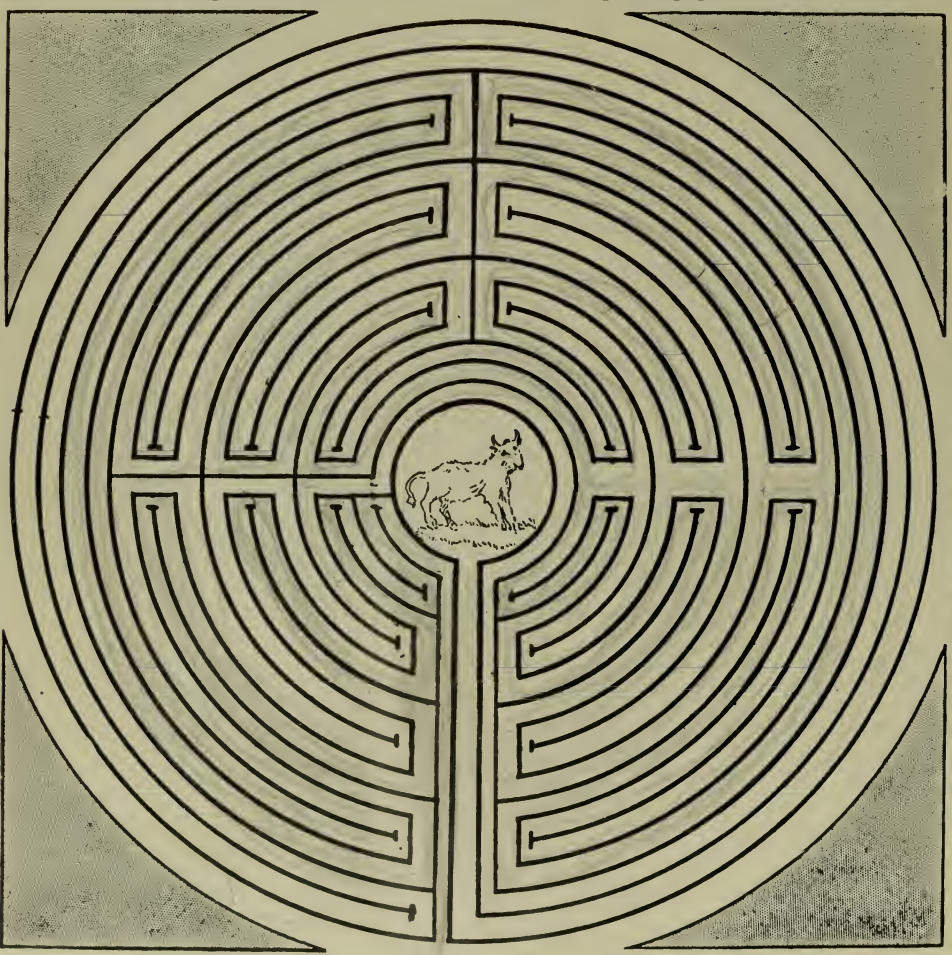
Which letter is a measure ?
Which is an industrious insect ?
Which letter is a drink ?
Which one is an exclamation ?
Which is a river in Scotland ?
Which is a bird ?
Which is a vegetable ?
Which is everlasting ?

12. ANAGRAMS FROM SHAKESPEARE

(a) Scour in a dust-tin.
(b) Alike, a slim, raw sheep.
(c) Close ruin.
(d) Tap oracle.
(e) Free such lost dogs.
(f) Fan on hot jug.
(g) Scour a lion.
(h) A charm'd one.

CAN YOU FIND YOUR WAY INTO THIS MAZE?

IN the centre of this maze is a goat that has strayed in from the outside and does not know how to escape. It looks very simple to enter by the opening at the bottom of the maze and to reach the centre, but it is not so easy as it looks. Let us see if we can reach the goat. Do not spoil this page of the book, but take a piece of tracing or tissue paper, or any other transparent paper, and trace off the lines of the maze. Then, starting at the opening at the bottom, try with a pencil or point to trace your way to the goat without crossing any lines.



THE NEXT THINGS TO MAKE AND DO BEGIN ON PAGE 5447.

In this passage from Miss Elizabeth Godfrey's very charming book on "English Children in the Olden Time," recently published by Messrs. Methuen & Co., we have a very tender and sympathetic study of a little princess whose lot was cast in troublous times. Charles the First was a bad king, but a good father. Though his religion and his treatment of the people raised the country against him, and finally brought him to the scaffold, his children had good reason to love their father; and it is pleasant to think of this misguided king as the playmate of his little ones. The Princess Elizabeth died young, and few of our histories do more than mention her name, so that such an attractive little story as her life here makes is well worth reading, and it adds to our knowledge of the king as well. Clarendon was the historian who told of the English Civil War, and a "halcyon time" means a time of peace and quiet, while "the coming storm" is the author's way of indicating that the Civil War was about to break out.

THE DAUGHTER OF KING CHARLES

THIS gentle little soul was of very different fibre from the two high-spirited Elizabeths who preceded her; and if ever child died of a broken heart, this little maiden surely did. Born towards the close of what Clarendon describes as "the halcyon time," before the coming storm, life smiled upon her opening years. Charles and Henrietta Maria were fond parents, and there was no oppressive regal state about the simple nursery life.

The stately king himself was not averse to romps with the children. We can fancy the merry little party at play in the great nurseries, riding, perhaps, on the old rocking-horse which had belonged to their father.

From the time of the outbreak of the trouble in Scotland there was but little peace for the royal nursery, which was shifted from pillar to post. When their father was brought as a prisoner from Holmby House to Hampton Court, they were allowed, on his earnest petition, to meet and dine with him at Maidenhead. Great must have been the joy of the little Elizabeth—grave beyond her years, and very loving—at seeing her father again, after so long and sad a separation.

There could hardly have been any merry play, unless with the little Harry, for the king's mind was too full of the serious charges he had to give them. He impressed upon Elizabeth that she must not consent to any proposal of marriage without the sanction of her mother and eldest brother. Even the little one was gravely bidden to be loyal to his brother, obedient to his mother, and true to his religion. He showed later that he was not too young to understand. While Charles remained at Hampton Court, he was allowed from time to time to "refresh himself with the company" of the children, and, no doubt, often played with them in the big and beautiful gardens there.

After his attempted escape, when he was immured in Carisbrooke Castle, the three children were brought to St. James's Palace, in the grounds of which was played that historic game of hide-and-seek, by means of which James got away, and was spirited over to The Hague to his sister. After this the Earl of Northumberland refused to have the responsibility of the other two any longer, and it was thought desirable they should be in the country, where they would be less likely to be made a centre for disaffection; so they were sent to the earl's sister, the Countess of Leicester, at Penshurst.

This was a happy change for the little princess. The countess treated them with the tenderness of a mother, and the respect due to the children of her sovereign, while her eldest daughter, the young widow, Lady Sunderland, became the object of Elizabeth's enthusiastic devotion. No doubt the little girl enjoyed playing with Dorothy's babies, "Poppet" and Penelope and the baby Harry, born since his father's death.

At the time of their father's execution they must have been at Leicester

CONTINUED FROM PAGE 5230

House, in London, as they were taken to receive his last blessing and farewell, he being lodged at St. James's the night before. Elizabeth was then of an age to understand the terrible sorrow, and she wept most bitterly, her little brother crying, too, to see her cry. The king took them both on his knee, and admonished them of their duty and loyal observance to the queen, their mother, and to their eldest brother. "They commanded their tears, and gave him," says Sir Thomas Herbert, an eye-witness, "such pretty and pertinent answers as drew tears of love and joy from his eyes; and then, praying God Almighty to bless them, he turned about, expressing a tender and fatherly affection. Most sorrowful was this parting, the young princess shedding tears and crying most lamentably, so as moved others to pity that formerly were hard-hearted; and at opening the bedchamber door, the king returned hastily from the window and kissed 'em and blessed 'em; so parted."

Poor little maid! No doubt Lady Leicester and her daughter did their best to comfort her, but she drooped; and, indeed, their kindness was her undoing, for rumour coming to the Parliament that Charles Stuart's children were treated with too much respect, Mr. Speaker Lenthall went down to Penshurst to investigate, and finding them served at a table apart, their removal to their father's former prison at Carisbrooke was ordered; and there, one Sunday, not long after, in one of those gloomy rooms, the little princess, who had been suffering from a feverish attack, was found dead, her cheek resting on her open Bible.

A KING ON KINGSHIP—FROM SHAKESPEARE

Shakespeare's historical dramas abound in noble speeches, which he places in the mouths of his heroes. We could wish that some of these fine speeches had actually been uttered; but, as no king has ever had the genius of a Shakespeare, we have to regard them as the poet's index to the characters he seeks to picture in our minds. He presents to us in Henry V. a splendid heroic figure, the very breath of Old England; and on the eve of the battle of Agincourt, when the king moves among his followers dressed as a common soldier and hears them say that whatever misfortune may befall them the king would be responsible for it, he is supposed to make this soliloquy, or speech, to himself. When Henry asks "What are thy rents?" he is supposed to be addressing the idol, or god, of Ceremony, and asking of it what are the advantages it brings. Towards the end of the soliloquy various classical allusions are used, such as the "eye of Phœbus," which means the sun, and "Elysium," an imaginary heaven of the Greeks; while "Hyperion" means the rising sun.

Upon the king! Let us our lives, our souls,
Our debts, our careful wives,
Our children, and our sins, lay on the king.
We must bear all. O hard condition!
Twin-born with greatness, subject to the breath
Of every fool whose sense no more can feel
But his own wringing! What infinite heart's ease
Must kings neglect that private men enjoy!
And what have kings that privates have not, too,
Save ceremony, save general ceremony?
And what art thou, thou idle ceremony?
What kind of god art thou, that suffer'st more
Of mortal griefs than do thy worshippers?
What are thy rents? What are thy comings-in?
O ceremony, show me but thy worth!
What is thy soul of adoration?
Art thou aught else but place, degree, and form,
Creating awe and fear in other men?
Wherein thou art less happy, being fear'd,
Than they in fearing.
What drink'st thou oft, instead of homage sweet,
But poisoned flattery? O! be sick, great greatness,
And bid thy ceremony give thee cure!
Think'st thou the fiery fever will go out
With titles blown from adulation?
Will it give place to flexure and low bending?
Canst thou, when thou command'st the beggar's knee,
Command the health of it? No, thou proud dream
That play'st so subtly with a king's repose;
I am a king that find thee; and I know
'Tis not the balm, the sceptre and the ball,
The sword, the mace, the crown imperial,
The inter-tissued robe of gold and pearl,
The farced title running 'fore the king,
The throne he sits on, nor the tide of pomp
That beats upon the high shore of this world,
No, not all these, thrice-gorgeous ceremony,
Not all these, laid in bed majestical,
Can sleep so soundly as the wretched slave,
Who, with a body filled and vacant mind,
Gets him to rest, crammed with distressful bread;
Never sees horrid night, the child of hell:
But, like a lackey, from the rise to set,
Sweats in the eye of Phœbus, and all night
Sleeps in Elysium; next day, after dawn,
Doth rise, and help Hyperion to his horse,
And follows so the ever-running year,
With profitable labour, to his grave;
And, but for ceremony, such a wretch,
Winding up days with toil, and nights with sleep,
Had the fore-hand and vantage of a king.
The slave, a member of the country's peace,
Enjoys it; but in gross brain little wots
What watch the king keeps to maintain the peace,
Whose hours the peasant best advantages.

THE LAST DAYS OF THE PRINCESS ELIZABETH

After the execution of Charles the First, his daughter, Princess Elizabeth, was imprisoned with her brother Henry in Carisbrooke Castle. The princess had always been delicate, and at Carisbrooke she caught a fever that ended her life on September 8, 1650. In this beautiful picture, by Miss Margaret Dicksee, we see the princess in her closing days, with her little brother. The sands in the hour-glass have almost run out, a symbol of the ebbing life of the princess.

THE OVERTHROW OF NAPOLEON—BY VICTOR HUGO

Victor Hugo, one of the greatest of the French writers of romance, is seen at his best, perhaps, in his wonderful story called "Les Misérables." This is a vast and fascinating work, for which the word "story" is scarcely adequate. It is a sort of history of certain imaginary characters, doomed by Fate to unhappiness; but it contains many moving and touching scenes of the most curiously varied nature. As illustrating the power of the author to describe in swift and striking phrases a great historic scene, which is enacted again with all its terror in his vivid imagination, no better passage could be chosen than his famous description of the fatal charge of the French cavalry which lost the battle of Waterloo to Napoleon, leaving him a broken man with no hope of wearing a crown again. We are to remember, in reading this, that it is not an actual account of a historic event, but an imaginative picture, which is doubtless more like the real thing than any cold statement of facts could ever be. That is the genius of great imaginative writing: without caring for accuracy of details, it leaves our mind with an impression of truth.

On the morning of Waterloo, Napoleon was satisfied.

He was right; the plan of battle which he had conceived was indeed admirable.

Napoleon was accustomed to look upon war fixedly; he never made, figure by figure, the tedious addition of details; the figures mattered little to him, provided they gave this total: Victory. Though beginnings went wrong, he was not alarmed at it—he who believed himself master and possessor of the end; he knew how to wait, believing himself beyond contingency, and he treated destiny as an equal treats an equal. He appeared to say to Fate: "Thou wouldst not dare."

About four o'clock the English line staggered backwards. All at once only the artillery and the sharpshooters were seen on the crest of the plateau; the rest disappeared. The regiments, driven by the shells and bullets of the French, fell back into the valley now crossed by the cow-path of the farm of Mont Saint Jean. A retrograde movement took place; the battle front of the English was slipping away. Wellington gave ground. "Beginning retreat!" cried Napoleon.

At the moment when Wellington drew back, Napoleon started up. He saw the plateau of Mont Saint Jean suddenly laid bare, and the front of the English army disappear. It rallied, but kept concealed. The emperor half rose in his stirrups. The flash of victory passed into his eyes. Wellington hurled back on the forest of Soignies and destroyed; that was the final overthrow of England!

The emperor then, contemplating this terrible turn of fortune, swept his glass for the last time over every point of the battlefield. His Guard, standing behind with grounded arms, looked up to him with a sort of religion. He was reflecting; he was examining the slopes, noting the ascents, scrutinising the tuft of trees, the square rye-field, the footpath; he seemed to count every bush.

He bent over and spoke in an undertone to the guide Lacoste. The guide made a negative sign of the head, probably treacherous.

The emperor rose up, and reflected. Wellington had fallen back. It remained only to complete this repulse by a crushing charge.

Napoleon, turning abruptly, sent off a courier at full speed to Paris to announce that the battle was won. Napoleon was one of those geniuses who rule the thunder. He had found his thunderbolt.

He ordered Milhaud's cuirassiers to carry the plateau of Mont Saint Jean.

They were 3,500. They formed a line of half a mile. They were gigantic men on colossal horses. There were twenty-six squadrons . . . Aide-de-camp Bernard brought them the emperor's orders. Ney drew his sword, and placed himself at their head. The enormous squadrons began to move.

Then was seen a fearful sight.

All this cavalry, with sabres drawn, banners waving, and trumpets sounding, formed in column by division, descended with an even movement, and, as one man, sank into that formidable depth where so many men had already fallen, disappeared in the smoke, then, rising from this valley of shadow, reappeared on the other side, still compact and serried, mounting, at full trot, through a cloud of grape emptying itself upon them, the frightful acclivity of mud of the plateau of Mont Saint Jean.

They rose, serious, menacing, imperturbable. In the intervals of the musketry and artillery could be heard the sound of this colossal tramp.

Behind the crest of the plateau, under cover of the masked battery, the English infantry, formed in thirteen squares, two

battalions to the square, and upon two lines—seven on the first, and six on the second—with musket to the shoulder, and eye upon their sights, waited calm, silent, and immovable. They could not see the cuirassiers, and the cuirassiers could not see them. They listened to the rising of this tide of men. They heard the increasing sound of three thousand horses, the alternate and measured striking of their hoofs at full trot, the rattling of the cuirasses, the clicking of the sabres, and a sort of fierce roar of

THE SUNKEN ROAD AT WATERLOO

This picture is from the engraving by Henry Graves & Sons; that on page 5361 is by permission of the Oldham Corporation

the coming host. There was a moment of fearful silence, then, suddenly, a long line of raised arms brandishing sabres appeared above the crest, with casques, trumpets, and standards, and three thousand faces with grey moustaches, crying, "Vive l'Empereur!" All this cavalry debouched on the plateau, and it was like the beginning of an earthquake.

All at once, tragic to relate, at the left of the English, and on our right, the head of the column of cuirassiers reared with a frightful clamour. Arrived at the culminating point of the crest, unmanageable, full of fury, and bent upon the extermination of the squares and cannons, the cuirassiers saw between themselves and the English a ditch—a yawning grave. It was the sunken road of Ohain. It was a frightful moment. There was the ravine, unlooked for, yawning at the very feet of the horses, two fathoms deep between its double slope. The second rank pushed in the first, the third pushed in the second; the horses reared, threw themselves over, fell upon their backs, and struggled with their feet in the air, piling up and overturning their riders; no power to retreat; the whole column was nothing but a projectile. The force required to crush the English crushed the French. The inexorable ravine could not yield until it was filled; riders and horses rolled in together pell-mell, grinding each other, making common flesh in this dreadful gulf, and when this grave was full of living men, the rest marched over them and passed on. Here the loss of the battle began.

A local tradition, which evidently exaggerates, says that two thousand horses and fifteen hundred men were buried in the sunken road of Ohain.

Napoleon, before ordering this charge of Milhaud's cuirassiers, had examined the ground, but could not see this hollow road, which did not make even a wrinkle on the surface of the plateau. Warned, however, and put on his guard by the little white chapel which marks its junction with the Nivelles road, he had put a question to the guide Lacoste. The guide had answered No. It may almost be said that from this shake of a peasant's head came the catastrophe of Napoleon.

THE NEXT STORY OF FAMOUS BOOKS IS ON PAGE 5432.

ONE OF CANADA'S RIVERS

One of the most beautiful rivers of Canada is the Kamanistiquia We show you here its more restless appearance, as it dashes over stones and apparently struggles to be free. Notice the different strata in the rocky banks.

Here is the same river, though you can hardly believe it. This quiet and placid stream with the grain elevators along its banks and the steamers on its waters seems entirely different from the restless stream above. The town is Fort William, Ontario, which is a centre of the grain trade.

Pictures copyright by H. C. White Co.

THE NEW WEST

CANADA, extending from the Atlantic to the Pacific, is more than equal in size to the United States and covers an area of 3,729,000 square miles — one-twelfth of the land surface of the earth. Of all the countries now in the stage of development none attracts more attention than the Canadian Northwest. This vast inland empire stretches from the Rocky Mountains on the west to the wooded country of New Ontario on the east and from the American boundary to a point yet to be determined on the north. The provinces which make up this area are vast plains, three times the size of the German Empire and five times larger than Great Britain and Ireland. The whole area is watered and drained by three great river systems. The rivers make one vast network of intersecting valleys. The provinces, Manitoba, Saskatchewan and Alberta, on account of the productiveness of their fertile prairies, are called the Granary of the Empire.

CLIMATE

Many people have wrong impressions regarding the climate of this western country. It will be interesting to know that Edmonton has as high an average temperature as St. Paul, fifteen hundred miles south. Further, that Northern Michigan and Manitoba have similar temperatures and that as we go north and west the influence of the winds from the Pacific have a marked effect in modifying the climate. The Peace River valley, seven hundred miles north of the American boundary, has for the past twenty years grown a superior quality of wheat.

The soil of this great grain belt, although of the richest loam, would never have been so productive had it not been for the climate. The blessings of the climate are threefold. It consists in pure air, cool temperature and low precipitation. The pure air prevents too rapid decay of the vegetable matter in the soil and thus prevents a great amount of waste. This is one explanation of the great fertilty of the soil. The cool temperature of the summer nights is responsible for the large relative yields of wheat. Raise the temperature of the summer days and nights and the yield of grain will be proportionally reduced. The cool temperature is one of the agricultural glories of the land. The light precipitation grows the crops and does not destroy them when grown. Nearly every portion of the wheat belt has a rainfall of fifteen or twenty inches; enough to grow good crops on land that is properly cultivated.

PIONEER DAYS

Twenty years ago, few men went into the Hudson Bay Company's country except trappers and hunters. North of the Canadian Pacific Railway was considered the fur-trader's world, a world of adventure, of chance and of danger. Fearing the mystery and cold of the northland, the pioneers clung to the south and settled near the boundary line. This gave impulse to Regina, Moose Jaw, Calgary and Lethbridge. When it became known that the climate of the north was tempered by warm Chinook winds and that the soil was very fertile, the great wave of population broke its barriers and poured into the fertile valleys of the north.

EXTENT OF WHEAT AREA

From the point of development the West is only in its first infancy; out of 200,000,000 acres of wheat land, only 8,395,400 were under cultivation in 1910. Nearly all of this land has been cultivated for the first time since 1898, prior to which the wheat-growing possibilities were not recognised. In spite of this small acreage Canada occupies the fifth place among the wheat-producing countries of the world. It does not require a great imagination to see

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Canada wresting from the United States her place as the world's greatest wheat-producing country. This will follow as soon as the remaining millions of Canada's fertile acres are brought under cultivation — a result which is only a matter of time and development.

RAILROADS

The trend of settlement follows the construction of railroads. At present, there are three great systems, the Canadian Pacific, the Grand Trunk Pacific and the Canadian Northern. Every year, these systems build hundreds of miles of new road, opening up to the settler tens of thousands of acres of new wheat lands. The time is not far distant when the whole wheat belt will be one great network of railroads.

MANITOBA

Manitoba is the most easterly of the prairie provinces. The first settlement was made in 1811 at Fort Garry by Lord Selkirk's colony of Scots. Colonisation was slow and when Manitoba became a province in 1870, its population was only 1,700. In 1911, the population of the province had increased to 455,614.

The province has an area of 251,832 square miles with a considerable part in water surface, as Lakes Winnipeg, Manitoba and Minnepegosis are within its boundaries. Its eastern part is thickly wooded, sparsely settled, but rich in mineral wealth. The south, a level fertile prairie, is thickly settled and has the appearance of the old established provinces of the East. The rich rolling country of the west and north is in places only sparsely settled. Of the arable land only about one sixth has been brought under cultivation.

All of the towns and most of the villages possess telephone and electric light plants. The province has an excellent public school system. The winters are cold but as the air is pure and dry a person does not mind them as much as those of the East.

" Manitoba hard " wheat is famous in the markets of Europe. The deep rich loam of the prairie produces the flinty kernel so much prized by millers. The wonderful thing about the soil is that its fertility lasts. There are old farms that have been cropped for thirty years and still produce as regularly as the changing seasons twenty bushels per acre of the finest hard wheat. For many years Manitoba was treated exclusively as a wheat-growing country but now dairying and stock-raising are attracting much attention.

WINNIPEG THE WONDER CITY

No other city of its age and size has been advertised throughout the world as Winnipeg, the capital of Manitoba. The city has risen where once old Fort Garry slumbered. Scarcely more than a generation ago it was the great fur-trading post of the Hudson Bay Company. Its population has increased from 1700 in 1870 to 136,035 in 1911 and during that period this small hamlet has grown to be the third city in the Dominion in size and in volume of business.

Winnipeg is the commercial centre of the West. As a wheat-shipping point it exceeds Chicago and Duluth. The city is the distributing centre for the wholesale and jobbing trade and every branch of business is represented. All the principal banks have branches and as a manufacturing city it ranks third in Canada. There are extensive stock-yards and immense abattoirs for slaughtering cattle for shipment to Europe and other markets. The yards of the Canadian Pacific Railway contain one hundred and twenty miles of track and are the largest in the world operated by one system. The city is the great railroad centre of the West. The three great railway systems radiate from it and connect the city with the East and the West.

Winnipeg is the most cosmopolitan city in Canada. Less than one-half of the population are Canadians and over thirty different languages are spoken on the streets. Icelanders have taken the foremost place among the adopted peoples. They have forged to the front in colleges and the university and in 1909 an Icelandic student was chosen as Rhodes scholar. The Scandinavians, industrious, honest and thrifty, have proven to be the best immigrants in Canada. The Galicians are the most troublesome of the foreigners.

THE BUFFALO VANISHES AND THE CITY COMES

5367

The American buffalo, or more properly bison, is almost extinct, though millions once roamed the prairies. A small herd still exists in Alberta, and sometimes rumours that thousands exist further north in the unexplored country are heard, but seem to lack foundation.

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It is hard to believe that this city of Winnipeg with all the modern improvements including tall buildings, did not exist forty years ago. Then there was only a little village around Fort Garry, which was only a fur trading post. Now it is one of the busiest cities in the world.

The city has splendid educational facilities. The public school system embraces grammar, high and normal schools. Several colleges and the University of Manitoba give an excellent opportunity for the study of the higher branches. In order to assist in moulding the foreigners into good citizens a very efficient night school system is maintained.

Brandon, a very attractive city of fourteen thousand people, is situated on the Canadian Pacific Railway, one hundred and thirty-three miles west of Winnipeg. The city is surrounded by a magnificent wheat country and is the distributing point for all kinds of goods. With large business blocks, fine churches, and residences it compares very favourably with Eastern cities.

SASKATCHEWAN

Saskatchewan, first constituted a province in 1905, is the central agricultural province of the West. It lies between the American border and 60th parallel of north latitude and between 102° and 110° longitude. This great rectangle contains 250,650 square miles, of which a large part is capable of producing the finest quality of wheat.

THE FERTILE SOIL

The first foot of soil of the West is the great natural heritage. It is worth more than all the minerals in the mountains from Alaska to Mexico. Next in importance is the subsoil, for unless it be of good value there is a neutralisation of the soil above. The worth of a soil and subsoil cannot be measured in dollars. Its value is the amount of nitrogen, phosphoric acid and potash which it contains, in other words, its power of producing plant growth. One acre of average soil in the Canadian West is worth more than twenty acres of average soil along the Atlantic seaboard. The man who cultivates the former can grow twenty successive crops without much diminution in yield, whereas the person who tills the latter in order to have such a rotation of good crops must pay for fertilisers half as much per acre as would buy an acre in Saskatchewan.

THE CLIMATE

The days in summer are long, bright and hot, but the nights are delightfully cool. The air is pure and dry, so a person does not mind the heat. The winter, which sets in about the first of December, continues without interruption until the end of March. The snowfall is not nearly so heavy as it is in Montreal. One great advantage is that June and July, the two great growing months, are the wettest of the year. The rainfall is just sufficient to furnish moisture for the growing crops. The province lies in the same latitude as the British Isles, Denmark, the Netherlands and Belgium. Edinburgh, Scotland, is farther north than any of the settled parts of Saskatchewan, and St. Petersburg, Russia, is in the same parallel of north latitude as the northern boundary of the province.

Miles of railroads are every year being built through the province and thousands of acres are added to the cultivated area. Not only wheat but all kinds of grains are raised. Cattle-raising is an important industry, and dairying is commencing to attract attention. There is an abundance of coal through the north and many other metals have been discovered. The north has valuable forests and the rivers and streams are filled with all kinds of fish.

Regina (30,213), the capital, and Moose Jaw (13,823) are flourishing cities on the main line of the Canadian Pacific Railway. They are surrounded by a fine wheat country and are growing rapidly. Saskatoon (12,000), a city of a few years' growth, is on the main line of the Grand Trunk Pacific. It is the seat of the Provincial University and the chief distributing point for a large section of the country. Prince Albert (6,254), near the centre of the province, on the Saskatchewan River and a branch of the Grand Trunk Pacific, is a rapidly growing town.

ALBERTA

Alberta, first made a province in 1905, is larger than either Germany or France. It has an area of 255,285 square miles and a population of 374,663. The province lies between the

THE GATEWAY OF THE WEST

Wherever you go in Central and Western Canada you will realize how important the wheat crop is. These tall towers beside the boat are the grain elevators which raise the wheat so that it can be handled more easily. This picture was made at Owen Sound in Lake Huron.

We have told you a great deal about canals in this book. Here is one of the important waterways of the New World. It is the Sault Ste. Marie Canal between Lakes Superior and Huron. The river which connects these two lakes is not safe for boats and this canal was built. Through it much of the commerce of the West passes.

Pictures copyright by H. C. White Co.

American boundary and the 60th parallel, while on the east and the west it is bounded by Saskatchewan and British Columbia.

Southern Alberta is the ideal ranching country. It was the winter home of the buffalo and is now the region of large ranches. Around Calgary the rainfall is not sufficient for regular crops; it is an open treeless prairie covered with wild grasses. At present much of this land is irrigated and bountiful crops are produced. The southeastern part of the province is valuable wheat land.

CLIMATE

The climate is always dry in winter. The snowfall is light and lies dry as sand under the feet. The air is clear and the sun is bright throughout the winter days. Spring is early; it opens at Edmonton about the same time as it does at Toronto, Ontario. In summer, the days are hot and the nights are always cool.

Horses and cattle run out all winter, unhoused and unfed. In the East, the grass, if left uncut, seeds, then decays and becomes worthless in the rain; but in the northwest, the prairie grass is self-cured by the dry weather of the fall and is just as good as standing hay. The winds blow off the light falls of snow and uncover the food for horses and cattle. This makes Alberta the ideal country for ranching.

CHINOOK WINDS

The climate is greatly influenced by the Chinook winds. These are warm and dry winds blowing with considerable force from time to time through the winter. They evaporate every vestige of snow from the prairies and take the snow without leaving a trace of dampness on the smooth surface of a stone. Their influence is felt as far east as Regina and far to the north but is most pronounced in Alberta.

RESOURCES

The northwest corner is true forest land while through the centre and parts of the north there are tracts of dense woods. A large part of the province is underlaid by coal beds, yielding coal in quality from lignite to anthracite. Gold in paying quantities is found in the northern part and also galena and silver. Natural gas and petroleum have been discovered in many places. When the province is surveyed other minerals will likely be found.

CITIES

Calgary (43,704), the commercial metropolis of the middle west, is situated on the main line of the Canadian Pacific Railway. The Rocky Mountains are visible on the western horizon. The city is a great manufacturing place as well as the distributing point for a large area of country.

Edmonton (24,900), the capital of the province, is located on the Saskatchewan River and the Grand Trunk Pacific. In 1901 this place was a small trading post of the Hudson's Bay Company. It has become a large manufacturing city as well as the chief distributing centre for a large fertile country. Across the river is Strathcona, a flourishing city and the seat of the new Provincial University.

Medicine Hat (5,608) is located to the east of Calgary on the Canadian Pacific Railway. It has natural gas and is rapidly becoming a great manufacturing town. Lethbridge is the centre of an extensive coal-mining district. The largest coal mines in Western Canada are located here. There are more than a score of new towns varying in size from fifteen hundred to two thousand people. Five years ago the sites of many of these towns were virgin prairies.

These three prairie provinces form the new West. This vast empire contains millions of acres of the finest agricultural and grazing lands and only a small per cent. has as yet been brought under cultivation. The development of these provinces is one of the remarkable events of the twentieth century. With such undeveloped resources is it a wonder that no other country is receiving such attention? Settlers from all parts of the world are rushing to these virgin prairies. During the past seven years over half a million of immigrants from the United States have crossed the line into Canada. Towns spring up in a night and in a year become full fledged cities. It seems, the prophecy that the twentieth century belongs to Canada will be fulfilled.

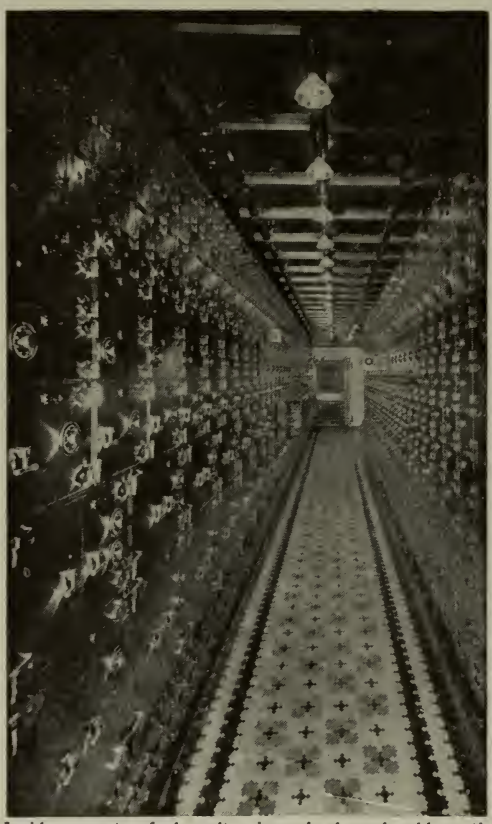
CONTINUED FROM PAGE 5304

HOW WE GUARD OUR TREASURES

WHEN we are leaving home for a while, and cannot take our valuables with us, we can lock them up in our own safe or strong-room, or send them to be guarded in the strong-room of a bank or some safe-deposit.

These strong-rooms are castles of security, before whose doors Aladdin himself might rub his lamp and utter his charm in vain. They are little cities of iron and steel and fireclay, with marvellous locks, and are guarded night and day by armed men. The walls of the buildings are so strong that no burglar's drill could break through. Within these walls are all sizes of strong-rooms and safes, made of metal plates of varying hardness, so that if by some chance a burglar did get in and set to work on them with his drill, he certainly would be foiled.

On the outside he would find a steel of one degree of hardness, to pierce which would require a drill of a certain temper. If he bored through that thickness he would come upon a layer of harder steel, which would smash his drill, and probably defy all his efforts. Supposing, however, that he managed to pierce this also, then he would come to a third plate of steel of still different temper, which would resist the drill that had come through the second layer. All this would take so long that he would be discovered by the guards.

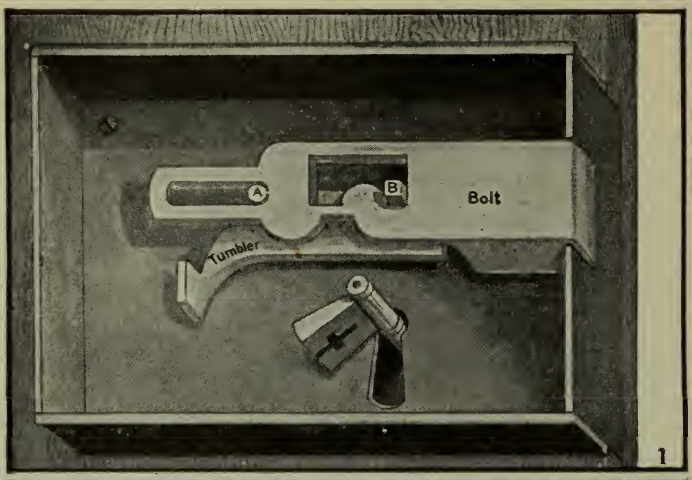


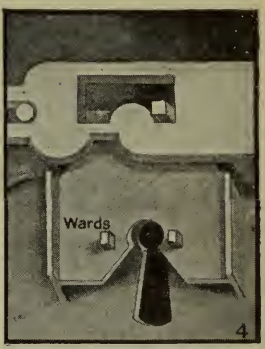
Inside a great safe-deposit, where deeds and gold worth millions of pounds are deposited in strong-rooms and safes.

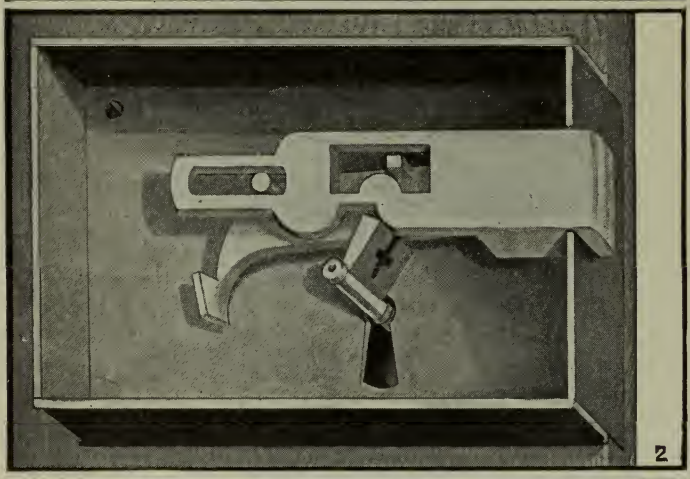
Supposing, however, that a dishonest man got a key of one of these safes or strong-rooms in the daytime, and went boldly in to open the safe. He could not do it alone. His key might turn the lock, but the door would not open until one of the guards turned his key in the lock also. It requires two keys to undo one of these doors, and the second is always kept by the guard. The guard himself is helpless unless he follows certain rules. The locks are governed by a clockwork arrangement, so that they can be opened only at certain hours.

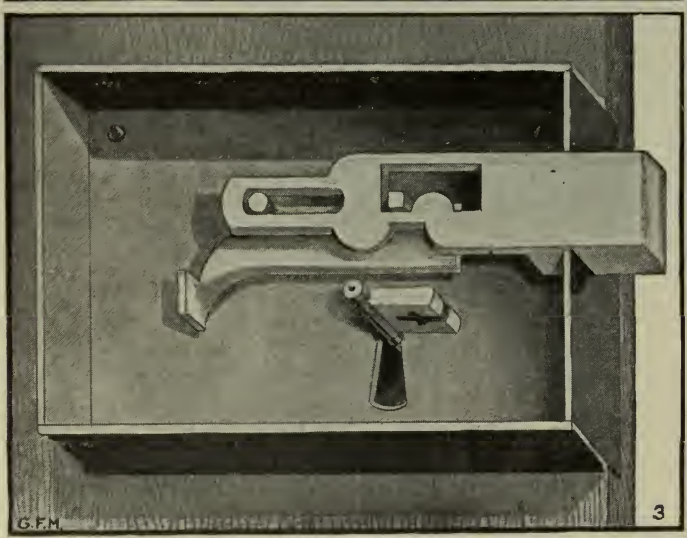
If we trust to the safe at home, we have a wonderful means of defence. The lock is so splendidly made that no burglar can "pick" or force it. He can only drill a hole through the safe's iron walls, and that takes time, so that he is very liable to be caught. But what if a fire should break out? The safe will guard its contents. Between the massive iron plates which form its walls there is a packing of sawdust. In this sawdust tubes of liquid are placed. When the heat of the fire becomes great, these tubes dissolve, and flood the sawdust with water or chemicals, thus enclosing the contents of the safe in a cold poultice through which the heat is quite unable to penetrate. Then there are locks that can be locked by any one of millions of keys, but can be unlocked only by the one that fastens them. To save the trouble of having all these keys we can have one key, and many little parts to fit on to it. We can leave all but one of these parts in the safe. The one that we want we take out, use it with the key to lock the safe, hang up the key, and go off, carrying only the little part with us. Anybody can use the key, but we have in our pocket the only thing in the world that will make the key turn the lock. Such locks as these, with their wonderful machinery, are a marvellous development from the simple tumbler lock shown on p. 5372, that has been used for hundreds of years, and is still being used.

HOW THE KEY TURNS THE LOCK

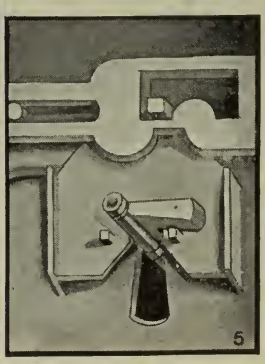






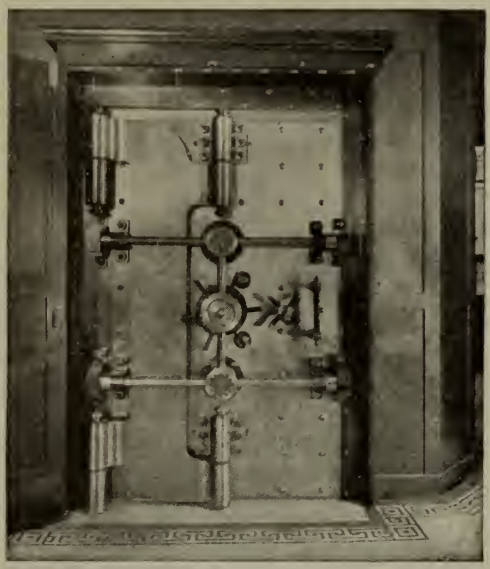


Locks are as old as civilisation, and were first made of wood. It was in the reign of Alfred the Great that locks were first manufactured in England, but there was little improvement in their construction until the end of the eighteenth century. Since that time there have been marvellous developments, until we have the elaborate and costly locks shown on page 5373. Here we see how the common tumbler-lock works. This is the ordinary cheap lock found on cupboards and drawers. As shown in this picture, a metal "tumbler" works on a pivot, A. A stud, B, projects from the tumbler and fits into a notch in the bolt, preventing the bolt from moving either way. But when the key is turned, as seen in picture 2, the "bit," or flat part of the key, lifts the tumbler and enables the bolt to be pushed along as seen in picture 3. As soon as the key is turned right round the tumbler falls, its stud fitting into a second notch in the bolt and holding it firm. Picture 4 shows the wards, or projections, which prevent any key but one specially cut to fit the lock from turning round, and in picture 5 we see how the right key can be turned over the wards.

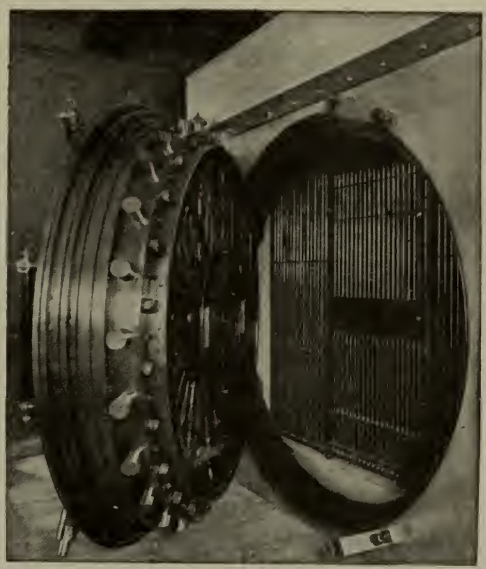


THESE PICTURES SHOW THE INSIDE OF THE LOCK OF AN ORDINARY DOOR

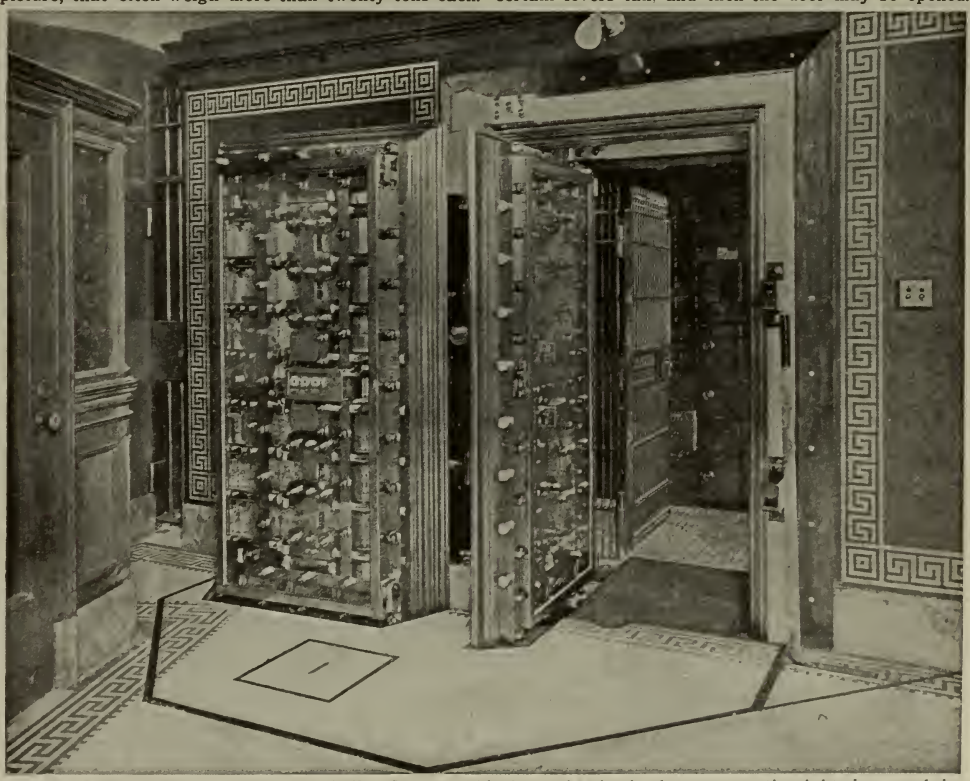
DOORS THAT COST THOUSANDS OF DOLLARS



Our great-grandfathers kept their treasures in a strong box made of wood bound round with iron, but to-day a skilled burglar would laugh at such a treasure-store, and the banks build wonderful burglar-proof and fire-proof steel vaults, with doors like that shown in this picture, that often weigh more than twenty tons each.



Sometimes these doors are round in shape. They have a marvellous system of bolts and fastenings, and the lock can be set to open at a certain time in the future. Then, if once the door is locked, no human power can open it till the fixed time comes round. At the exact hour certain levers fall, and then the door may be opened.



Here is one of the strongest doors ever built. It is a double door—that is, the door seen on the right closes and then the one on the left is shut over it. This door cost more than five thousand dollars. The key has a dial upon it with a number of letters that can be arranged in thousands of ways. Once the door is locked, it can never be opened unless the letters on the key are arranged in exactly the same way as they were when the door was locked.

THE NEXT STORY OF FAMILIAR THINGS BEGINS ON PAGE 5309.

ONLY A BOY

It cannot truly be said that these lines are "poetry." They are poetic in form, they rhyme, but they lack rhythm or beauty of movement. Their merit is that they give a quick and happy outline of a good healthy type of boyhood.

ONLY a boy, with his noise and fun,
The veriest mystery under the sun ;
As brimful of mischief, and wit and glee,
As ever a human frame can be,
And as hard to manage as—what ? ah, me !
'Tis hard to tell,
Yet we loved him well

Only a boy with his fearful tread,
Who cannot be driven, must be led.
Who troubles the neighbour's dogs and cats,
And tears more clothes, and spoils more hats,
Loses more kites, and tops, and bats,
Than would stock a store
For a year or more.

Only a boy, with his wild, strange ways,
With his idle hours, or his busy days,
With his queer remarks and his odd replies,
Sometimes foolish and sometimes wise.
Often brilliant for one of his size,
As a meteor hurled
From the planet world.

Only a boy, who will be a man,
If Nature goes on with her first great plan—
If intemperance, or some fatal snare,
Conspire not to rob us of this our heir,
Our blessing, our trouble, our rest, our care,
Our torment, our joy !
Only a boy.

THE BAILIFF'S DAUGHTER

Here we have a well-known and typical old English ballad. The story it tells is of the simplest, for in the days when ballads were popular, people were more simple-minded than they are in our time. It is a quaint and unlikely story, but its simplicity has a charm for us readers of a later day. It is difficult to imagine that the London apprentice let seven long years go by without seeing his sweetheart at Islington ! But we must not expect common-sense views of life from these old ballads, which were meant only to entertain.

THERE was a youth, a well-beloved youth,
And he was a squire's son,
He loved the bailiff's daughter dear
That lived in Islington.

Yet she was coy and would not believe
That he did love her so,
No, nor at any time would she
Any countenance to him show.

But when his friends did understand
His fond and foolish mind,
They sent him up to fair London
An apprentice for to bind.

And when he had been seven long years,
And never his love could see :
Many a tear have I shed for her sake,
When she little thought of me.

Then all the maids of Islington
Went forth to sport and play,
All but the bailiff's daughter dear ;
She secretly stole away.

She pulled off her gown of green
And put on ragged attire,
And to fair London she would go
Her true love to enquire.

And as she went along the high road,
The weather being hot and dry,
She sat her down upon a green bank,
And her true love came riding by.

She started up, with a colour so red,
Catching hold of his bridle-rein ;
"One penny, one penny, kind sir," she said,
"Will ease me of much pain."

"Before I give you one penny, sweetheart,
Pray tell me where you were born."
"At Islington, kind sir," said she,
"Where I have had many a scorn."

"I prythee, sweetheart, then tell to me,
O tell me whether you know,
The bailiff's daughter of Islington."
"She is dead, sir, long ago."

"If she be dead, then take my horse,
My saddle and bridle also ;
For I will unto some far country,
Where no man shall me know."

"O stay, O stay, thou goodly youth,
She standeth by thy side ;
She is here alive, she is not dead,
And ready to be thy bride."

"O farewell grief, and welcome joy,
Ten thousand times therefore ;
For now I have found mine own true love,
Whom I thought I should never see more."

TIME

Sir Walter Scott gives a fine sense of mystery and awe to the grim figure of old Father Time in this little poem. Time is always shown to us an old, old man with an hour-glass and a scythe: the one to suggest the passing of the hours, and the other the reaping of Time's harvest, which means the end of life. Carle is an old-fashioned word, still used in Scotland, to denote an elderly and rather rough sort of man. Originally it meant simply man, and the Saxon name Carl, from which we get Charles, came from it.

"WHY sitt'st thou by that ruined hall,
Thou aged carle so stern and gray ?
Dost thou its former pride recall,
Or ponder how it passed away ? "

"Know'st thou not me ? " the Deep Voice cried ;
"So long enjoyed, so oft misused—
Alternate, in thy fickle pride,
Desired, neglected, and accused !

"Before my breath, like blazing flax,
Man and his marvels pass away !
And changing empires wane and wax,
Are founded, flourish, and decay.

"Redeem mine hours—the space is brief—
While in my glass the sand-grains shiver,
And measureless thy joy or grief,
When Time and thou shalt part for ever ! "

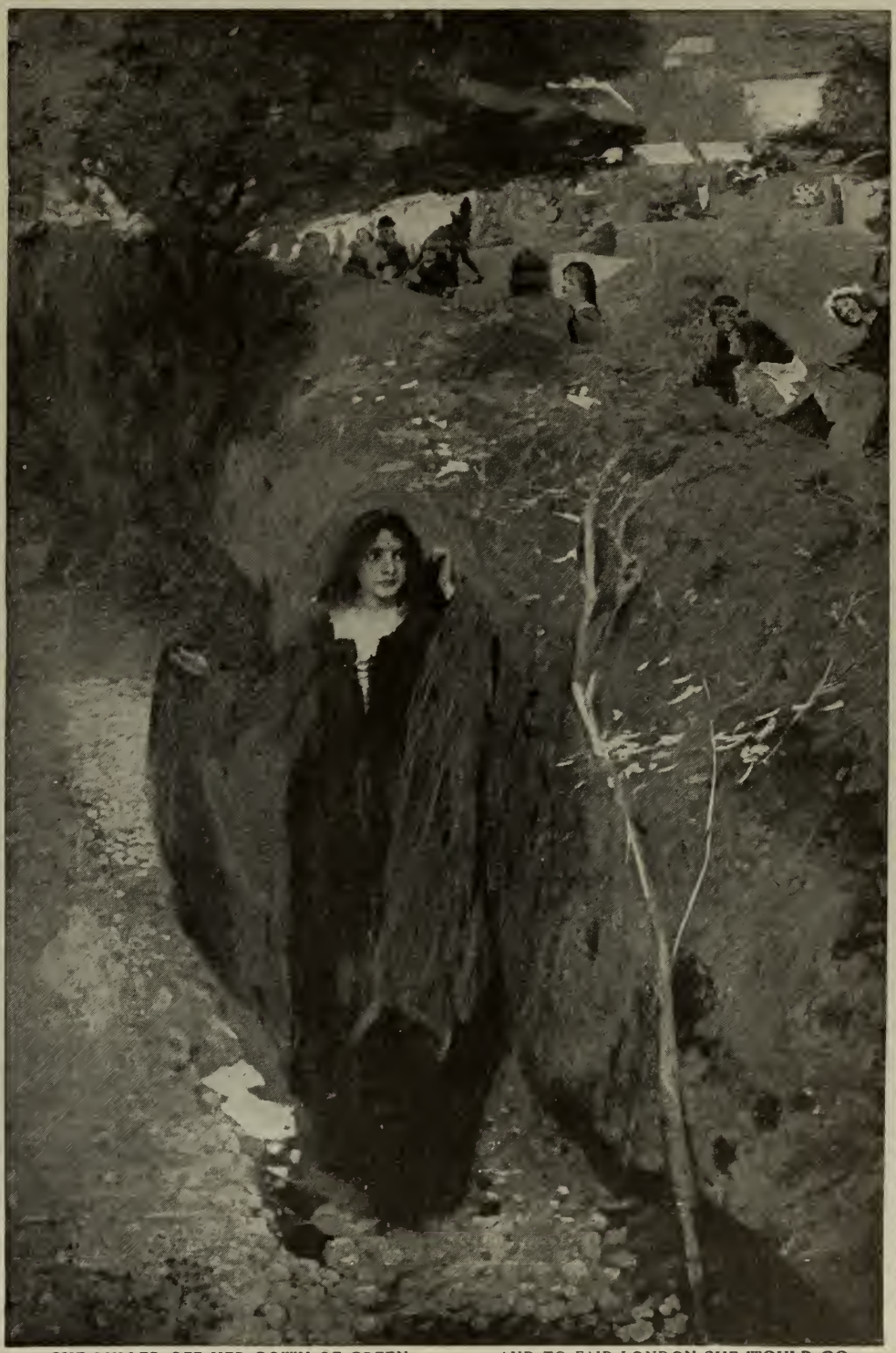
ENVOY

An "envoy," from a French word, "envoi," means the verses at the end of a poem, in which some general idea of the poem is summed up and emphasised: the "envoy" is thus the "message" which the poem has "carried"—for "envoyer" in French means "to send"—from the poet to the reader. But we often find tiny poems given this title without any preceding verses. In this case it is meant to suggest the last word on a noble life, and it is a poetical way of saying that the life to which this is the "envoy" had been of itself a poem. The writer of the following is Charlotte Becker.

SAY not, because he did no wondrous deed,
Amassed no worldly gain,
Wrote no great book, revealed no hidden truth,
Perchance he lived in vain.

For there was grief within a thousand hearts
The hour he ceased to live ;
He held the love of women, and of men—
Life has no more to give !

THE BAILIFF'S DAUGHTER OF ISLINGTON



SHE PULLED OFF HER GOWN OF GREEN
AND PUT ON RAGGED ATTIRE,

AND TO FAIR LONDON SHE WOULD GO,
HER TRUE LOVE TO ENQUIRE.

This picture, illustrating the poem on page 5374, is reproduced, by permission, from the painting by Mr. John Hatherell, R.I.

SOUND THE LOUD TIMBREL

Sound the loud timbrel o'er Egypt's dark sea!
Jehovah has triumphed — His people are free.
Sing, for the pride of the tyrant is broken,
His chariots, his horsemen, all splendid and brave,
How vain was their boasting! the Lord hath but spoken,
And chariots and horsemen are sunk in the wave.
Sound the loud timbrel o'er Egypt's dark sea!
Jehovah has triumphed — His people are free.

Praise to the Conqueror, praise to the Lord,
His word is our arrow, His breath is our sword!
Who shall return to tell Egypt the story,
Of those she sent forth in the hour of her pride?
For the Lord hath looked out from His pillar of glory,
And all her brave thousands are dashed in the tide.
Sound the loud timbrel o'er Egypt's dark sea!
Jehovah has triumphed — His people are free.

— Thomas Moore.

PIPING DOWN THE VALLEYS WILD

William Blake, the famous English poet, has always a touch of the mystical and imaginative even in his simplest verses, and this poem is no exception to the rule. What the poet means to suggest to us is the inspiration of the true singer of Nature, whose written poems should be as much in tune with Nature itself as the imaginary piper who here turns his hollow reed into a pen to write down for ever the songs he has been piping.

Piping down the valleys wild,
Piping songs of pleasant glee,
On a cloud I saw a child,
And he, laughing, said to me:

"Pipe a song about a lamb."
So I piped with merry cheer.
"Piper, pipe that song again."
So I piped; he wept to hear.

"Drop thy pipe, thy happy pipe;
Sing thy songs of happy cheer."
So I sang the same again,
While he wept with joy to hear.

"Piper, sit thee down, and write
In a book that all may read."
So he vanished from my sight,
And I plucked a hollow reed.

And I made a rural pen,
And I stained the water clear,
And I wrote my happy songs
Every child may joy to hear.

HERACLITUS

This very beautiful little poem by William Cory, generally called William Johnson Cory because his name was formerly Johnson, is supposed to be a farewell tribute from the friend of a Greek poet, whom we know only by tradition. There was a famous Heraclitus, a philosopher of Ephesus, who lived 500 years before the birth of Christ, but the Heraclitus here addressed was a different person, who lived a century or more later. Whereas the philosopher's language was uncouth and difficult to understand, the poems of the later Heraclitus were famed for their beautiful melody. The life of the philosopher is dealt with in another page of this book. William Cory was a well-known scholar and an assistant master at Eton College. Caria was a place in Asia Minor where Heraclitus lived.

They told me, Heraclitus, they told me you were dead,
They brought me bitter news to hear and bitter tears to shed.
I wept as I remembered how often you and I
Had tired the sun with talking and sent him down the sky.

And now that thou art lying, my dear old Carian guest,
A handful of grey ashes, long, long ago at rest,
Still are thy pleasant voices, thy nightingales, awake;
For Death, he taketh all away, but them he cannot take.

MASSA'S IN THE COLD, COLD GROUND

Stephen Collins Foster, who wrote so many darkey songs, is the author of the following poem.

Round de meadows am a ringing
De darkey's mournful song,
While de mocking bird am singing
Happy as de day am long.
Where de ivy am a creeping
O'er de grassy mound,
Dare old massa am a sleeping,
Sleeping in de cold, cold ground.

Down in de cornfield,
Hear dat mournful sound:
All the darkeys am a weeping,
Massa's in de cold, cold ground.

When de autumn leaves am falling,
When de days are cold,
'Twas hard to hear old massa calling,
Cayse he was so weak and old.
Now de orange trees am blooming,
On de sandy shore,
Now de summer days am coming,
Massa nebber calls no more.

Massa make de darkeys love him,
Cayse he was so kind,
Now, dey sadly weep above him,
Mourning cayse he leave dem behind.
I cannot work before to-morrow,
Cayse de teardrop flow,
I try to drive away my sorrow,
Pickin' on de old banjo.

THE MAN WHO IS TWELVE YEARS OLD

The great poet Wordsworth said, "The child is father of the man," and in these lines Maurice Smiley, an American writer, develops a similar thought. He sees in every boy of twelve the man into whom the boy will change in future years, and, knowing that all the great men of a later age are now boys, he takes off his hat and salutes the hidden greatness in boys, undeveloped, but there. That is why all boys and girls should be educated — nobody can tell where genius waits.

THERE'S a man that I know, and he lives near you,
In a town called Everywhere;
You might not think he's a man from his hat
Or the clothes he may chance to wear;
But under the jacket with many a patch
Is a heart more precious than gold —
The heart of a man 'neath the coat of a boy,
A man who is twelve years old.

He only is waiting to wear the crown
That already is made for his brow;
And I pray that his mind will always be clean,
His body as pure as snow;
His heart always fresh and sunny and warm,
And free from life's canker and mould,
And may he be worthy his waiting estate,
This man who is twelve years old.

We never may know what the future will make
Of the boys that we carelessly meet,
For many a statesman is now at school,
And presidents play in the street.
The hand that is busy with playthings now
The reins of power will hold;
So I take off my hat and gladly salute
This man who is twelve years old.

FOUR THINGS

Quite a long sermon is condensed in this pithy little verse by Dr. Henry Van Dyke, a famous American preacher and poet.

FOUR things a man must learn to do
If he would make his record true:
To think without confusion clearly;
To love his fellow-men sincerely;
To act from honest motives purely;
To trust in God and heaven securely.

THE SLEEP

"He giveth His beloved sleep." — Ps. cxxvii, 2.

OF all the thoughts of God that are
Borne inward unto souls afar,
Along the Psalmist's music deep,
Now tell me if that any is,
For gift or grace, surpassing this —
"He giveth His beloved sleep?"

What would we give to our beloved?
The hero's heart, to be unmoved,
The poet's star-tuned harp, to sweep,
The patriot's voice, to teach and rouse,
The monarch's crown, to light the brows? —
"He giveth His beloved sleep."

"Sleep soft, beloved!" we sometimes say,
Who have no tune to charm away
Sad dreams that through the eyelids creep:
But never doleful dream again
Shall break the happy slumber, when
"He giveth His beloved sleep."

O earth, so full of dreary noises!
O men, with wailing in your voices!
O delved gold, the wailers heap!
O strife, O curse, that o'er it fall!
God makes a silence through you all,
And "giveth His beloved sleep."

His dews drop mutely on the hill,
His cloud above it floateth still,
Though on its slope men sow and reap.
More softly than the dew is shed
Or cloud is floated overhead,
"He giveth His beloved sleep."

Yea, men may wonder while they scan
A living, thinking, feeling man,
Confirmed, in such a rest to keep;
But angels say — and through the word
I think their happy smile is heard —
"He giveth His beloved sleep."

For me, my heart that erst did go
Most like a tired child at a show,
That sees through years the jugglers leap,—
Would now its wearied vision close,
Would childlike on His love repose,
Who "giveth His beloved sleep!"

And friends, dear friends, — when it shall be
That this low breath is gone from me,
And round my bier you come to weep,
Let one, most loving of you all,
Say, "Not a tear must o'er her fall —
He giveth His beloved sleep."

— ELIZABETH BARRETT BROWNING.

MARCO BOZZARIS

Marco Bozzaris was a Greek patriot, who for many years fought against the Turks for the freedom of his country. He was killed in an attack upon the Turkish army. This little poem was written by Fitz-Greene Halleck.

AT midnight, in his guarded tent,
The Turk was dreaming of the hour
When Greece, her knee in suppliance bent,
Should tremble at his power:
In dreams, through camp and court, he bore
The trophies of a conqueror;
In dreams his song of triumph heard;
Then wore his monarch's signet ring:
Then pressed that monarch's throne — a king;
As wild his thoughts, and gay of wing,
As Eden's garden bird.

At midnight, in the forest shades,
Bozzaris ranged his Suliote band,
True as the steel of their tried blades,
Heroes in heart and hand.
There had the Persian's thousands stood,

There had the glad earth drunk their blood
On old Platæa's day;
And now there breathed that haunted air
The sons of sires who conquered there,
With arm to strike and soul to dare,
As quick, as far as they.

An hour passed on — the Turk awoke;
That bright dream was his last;
He woke — to hear his sentries shriek,
"To arms! they come! the Greek! the Greek!"
He woke — to die midst flame, and smoke,
And shout, and groan, and sabre-stroke,
And death-shots falling thick and fast
As lightnings from the mountain-cloud;
And heard, with voice as trumpet loud,
Bozzaris cheer his band:
"Strike — till the last armed foe expires;
Strike — for your altars and your fires;
Strike — for the green graves of your sires;
God — and your native land!"

They fought — like brave men, long and well.
They piled that ground with Moslem slain,
They conquered — but Bozzaris fell,
Bleeding at every vein.
His few surviving comrades saw
His smile when rang their proud hurrah,
And the red field was won;
Then saw in death his eyelids close
Calmly, as to a night's repose,
Like flowers at set of sun.

Bozzaris! with the storied brave
Greece nurtured in her glory's time,
Rest thee — there is no prouder grave,
Even in her proud clime.

. . . . . .

Talk of thy doom without a sigh;
For thou art Freedom's now, and Fame's:
One of the few, the immortal names,
That were not born to die.

— Fitz-Green Halleck.

THE EVE OF WATERLOO

This poem was written to commemorate the awful battle of Waterloo. Napoleon was marching upon the city and Lord Byron, who wrote the poem, brings vividly before us the picture of the terror-stricken inhabitants on the eve of the battle.

There was a sound of revelry by night,
And Belgium's capital had gathered then
Her Beauty and her Chivalry, and bright
The lamps shone o'er fair women and brave men;
A thousand hearts beat happily; and when
Music arose with its voluptuous swell,
Soft eyes look'd love to eyes which spake again,
And all went merry as a marriage bell;
But hush! hark! a deep sound strikes like a rising knell!

Did ye not hear it? — No; 'twas but the wind,
Or the car rattling o'er the stony street;
On with the dance! let joy be unconfined;
No sleep till morn, when Youth and Pleasure meet
To chase the glowing Hours with flying feet —
But hark! — that heavy sound breaks in once more,
As if the clouds its echo would repeat;
And nearer, clearer, deadlier than before!
Arm! Arm! it is — it is — the cannon's opening roar!

Within a window'd niche of that high hall
Sate Brunswick's fated chieftain; he did hear
That sound the first amidst the festival,
And caught its tone with Death's prophetic ear;
And when they smiled because he deem'd it near,
His heart more truly knew that peal too well
Which stretch'd his father on a bloody bier,
And roused the vengeance blood alone could quell;
He rush'd into the field, and, foremost fighting, fell.

Ah! then there was hurrying to and fro,
And gathering tears, and tremblings of distress,
And cheeks all pale, which but an hour ago
Blush'd at the praise of their own loveliness;
And there were sudden partings, such as press
The life from out young hearts, and choking sighs
Which ne'er might be repeated; who could guess
If ever more should meet those mutual eyes,
Since upon night so sweet such awful morn could rise!

And there was mounting in hot haste: the steed,
The mustering squadron, and the clattering car,
Went pouring forward with impetuous speed,
And swiftly forming in the ranks of war;
And the deep thunder peal on peal afar;
And near, the beat of the alarming drum
Roused up the soldier ere the morning star;
While throng'd the citizens with terror dumb,
Or whispering, with white lips — "The foe! they come! they come!"

And wild and high the "Cameron's gathering" rose!
The war-note of Lochiel, which Albyn's hills
Have heard, and heard, too, have her Saxon foes:—
How in the noon of night that pibroch thrills,
Savage and shrill! But with the breath which fills
Their mountain pipe, so fill the mountaineers
With the fierce native daring which instils
The stirring memory of a thousand years,
And Evan's, Donald's fame rings in each clansman's ears!

And Ardennes waves above them her green leaves,
Dewy with Nature's tear-drops as they pass,
Grieving, if aught inanimate e'er grieves,
Over the unreturning brave,—alas!
Ere evening to be trodden like the grass
Which now beneath them, but above shall grow
In its next verdure, when this fiery mass
Of living valour, rolling on the foe
And burning with high hope shall moulder cold and low.

Last noon beheld them full of lusty life,
Last eve in Beauty's circle proudly gay,
The midnight brought the signal-sound of strife,
The morn, the marshalling in arms,—the day
Battle's magnificently stern array!
The thunder-clouds close o'er it, which when rent
The earth is cover'd thick with other clay,
Which her own clay shall cover, heap'd and pent,
Rider and horse,—friend, foe,—in one red burial blent!

THE BIVOUAC OF THE DEAD

"The Bivouac of the Dead," by Theodore O'Hara, is inscribed on a monument in the burying grounds wherever the soldiers of England lie at rest.

The muffled drum's sad roll has beat
The soldier's last tattoo;
No more on life's parade shall meet
That brave and fallen few.
On Fame's eternal camping ground
Their silent tents are spread,
And glory guards, with solemn round,
The bivouac of the dead.

No rumour of the foe's advance
Now swells upon the wind;
No troubled thought at midnight haunts
Of loved ones left behind;
No vision of the morrow's strife
The warrior's dream alarms;
No braying horn, nor screaming fife,
At dawn shall call to arms.

The neighing troop, the flashing blade,
The bugle's stirring blast,
The charge, the dreadful cannonade,
The din and shout are past;
Now war's wild note nor glory's peal
Shall thrill with fierce delight
Those breasts that never more may feel
The rapture of the fight.

Like the fierce northern hurricane
That sweeps his great plateau,
Flushed with the triumph yet to gain,
Came down the serried foe.
Who heard the thunder of the fray
Break o'er the field beneath,
Knew well the watchword of that day
Was "Victory or death."

Long had the doubtful conflict raged
O'er all that stricken plain,
For never fiercer fight had waged
The vengeful blood of Spain;
And still the storm of battle blew,
Still swelled the gory tide;
Not long, our stout old chieftain knew,
Such odds his strength could bide.

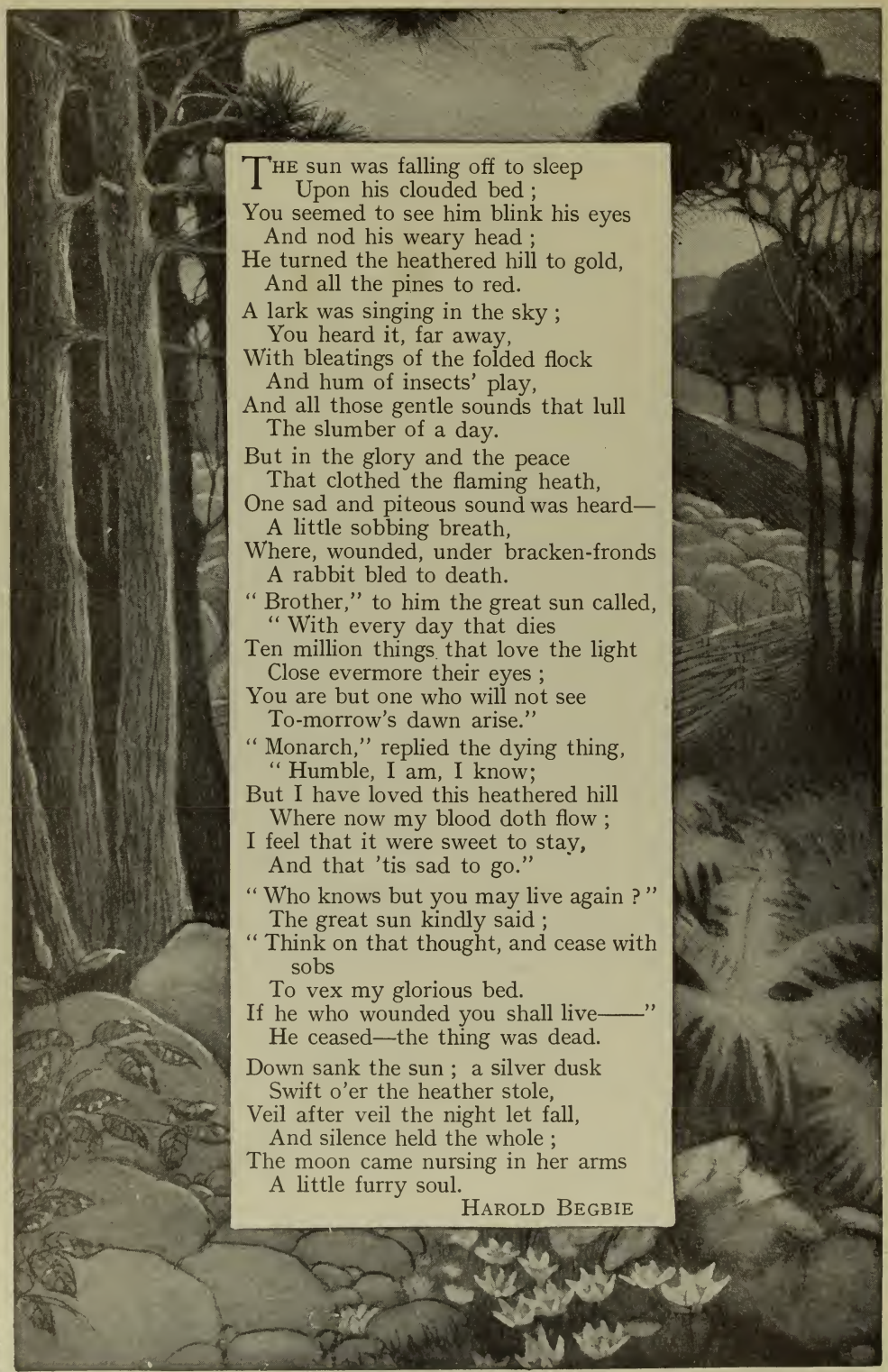
'Twas in that hour his stern command
Called to a martyr's grave
The flower of his belovèd land
The nation's flag to save.
By rivers of their fathers' gore
His first-born laurels grew,
And well he deemed the sons would pour
Their lives for glory too.

Sons of the Dark and Bloody Ground,
Ye must not slumber there,
Where stranger steps and tongues resound
Along the heedless air;
Your own proud land's heroic soil
Shall be your fitter grave;
She claims from war his richest spoil—
The ashes of her brave.

Rest on, embalmed and sainted dead,
Dear as the blood ye gave;
No impious footstep here shall tread
The herbage of your grave;
Nor shall your glory be forgot
While Fame her record keeps,
Or Honour points the hallowed spot
Where Valour proudly sleeps.

Yon marble minstrel's voiceless stone,
In deathless song shall tell,
When many a vanished age hath flown,
The story how ye fell;
Nor wreck, nor change, nor winter's blight,
Nor Time's remorseless doom,
Shall dim one ray of glory's light
That gilds your deathless tomb.

THE SUN WAS FALLING OFF TO SLEEP



THE sun was falling off to sleep
Upon his clouded bed;
You seemed to see him blink his eyes
And nod his weary head;
He turned the heathered hill to gold,
And all the pines to red.

A lark was singing in the sky;
You heard it, far away,
With bleatings of the folded flock
And hum of insects' play,
And all those gentle sounds that lull
The slumber of a day.

But in the glory and the peace
That clothed the flaming heath,
One sad and piteous sound was heard—
A little sobbing breath,
Where, wounded, under bracken-fronds
A rabbit bled to death.

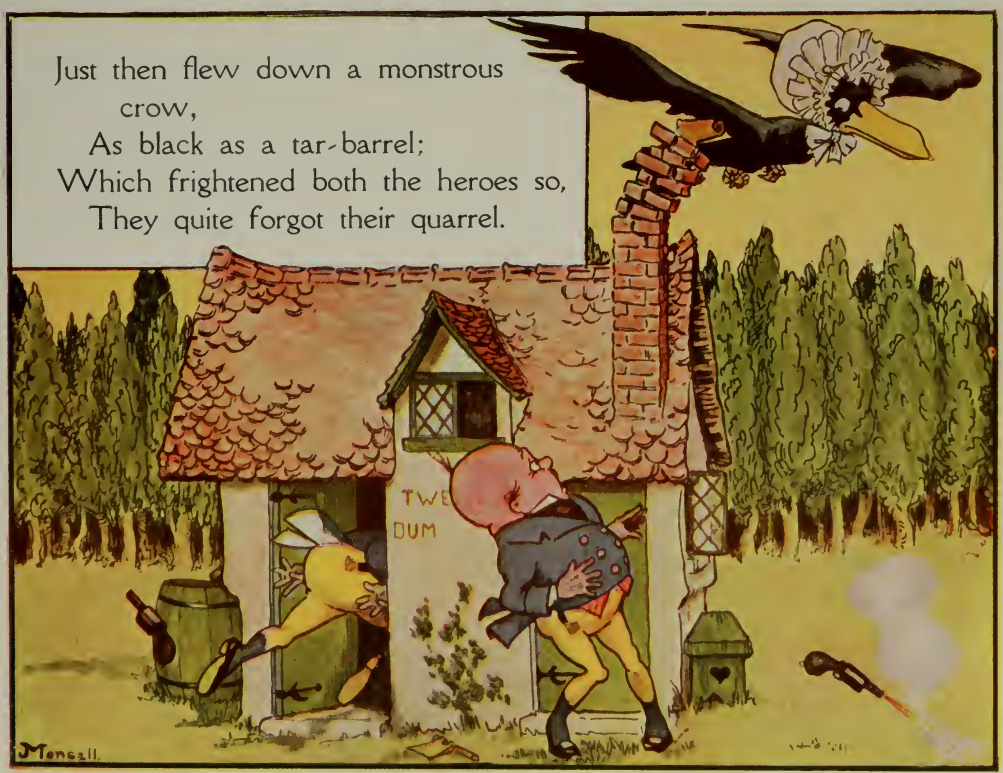
"Brother," to him the great sun called,
"With every day that dies
Ten million things that love the light
Close evermore their eyes;
You are but one who will not see
To-morrow's dawn arise."

"Monarch," replied the dying thing,
"Humble, I am, I know;
But I have loved this heathered hill
Where now my blood doth flow;
I feel that it were sweet to stay,
And that 'tis sad to go."

"Who knows but you may live again?"
The great sun kindly said;
"Think on that thought, and cease with sobs
To vex my glorious bed.
If he who wounded you shall live——"
He ceased—the thing was dead.

Down sank the sun; a silver dusk
Swift o'er the heather stole,
Veil after veil the night let fall,
And silence held the whole;
The moon came nursing in her arms
A little furry soul.

HAROLD BEGBIE



TWEEDLEDUM AND TWEEDLEDEE

DO A HORSE'S EYES MAGNIFY?

CONTINUED FROM PAGE 5252.

It is sometimes said that the reason why a horse obeys a man who is smaller than itself is that the horses eyes magnify, so that it gets an impression of size which causes it to obey. This is not an idea that anyone should really believe.

To begin with, if a horse's eyes magnified, everything would be magnified, and a man would still be small in proportion to, say, another horse. Again, like ourselves, a horse is not dependent merely upon its sight to know size; it knows by feeling and sound that a man is smaller than itself.

But, of course, a horse's eyes do not magnify at all, quite apart from the fact that the horse would not be deceived if they did. To magnify is to make bigger than Nature. An eye made like a magnifying glass might do this when looking at a very near object, and it is probable that there are eyes in certain tiny animals which are really "microscopic," as we say.

But no eye can possibly magnify anything seen at a distance, for even the telescope cannot do that. It can only make the image of anything seen less small than it would appear without the telescope. A horse's eyes see tiny images of things thrown on the eye-curtain, as our eyes do, even of huge things like the sun. And the horse obeys us, as other things do, because we have more mind, and mind is master.

CAN WE MAKE OURSELVES BEAUTIFUL?

There are many kinds of beauty, some that last and some that wear away. We cannot do much for ourselves in the way of the beauty that does not last, for this depends on the chance of our birth and fortune. We can do something, however, by means of living healthy, sensible lives, not eating or drinking too much, taking enough time in fresh air, and keeping the skin clear and the muscles of the face firm by sensible exercise. All this is well worth doing for itself, as well as for its effect upon our appearance.

But there is a deeper kind of beauty which we can indeed make for ourselves if we are wise enough, and to which there will be no end. There is the beauty of a beautiful soul shining through the face like the light streaming through the windows of a house at night. By thinking kind thoughts, by keeping our temper, by persevering firmly in our purposes, we can make our faces a history and register of what our lives have been. All states of feeling affect the expression of the face, and in time the kinds of feeling that we have oftenest had make lines that stay upon our faces, so that children will run to us or run away from us. And so we can make ourselves beautiful or ugly in the only way that matters.

WHY DID THE SAND GET ON THE SEASHORE?

The sand found on the seashore or anywhere else is made of one of the commonest elements in the world, the name of which is silicon. In the part of the world that is not actually alive, silicon corresponds to carbon in the living world. They are very similar elements, and they both

combine with oxygen to form compounds called oxides. In the case of carbon this is carbonic acid gas, but in the case of silicon it is the sand of the seashore, which is also found in many other forms.

Ages ago, when the earth was far hotter than it is now, its crust was formed by certain things turning solid, and almost the most important fact of that time was that the element silicon was all burnt up into oxygen, of which there was enough and to spare. The common name for the compound of silicon and oxygen is silica. The making of silica by the burning up of silicon was the first step toward the sand of the seashore.

Now, a great portion of this silica, made up of very tiny grains, became glued together by means of other softer substances, so as to form the sort of rock called sandstone. And when this rock is exposed to water and wind, they break down the sandstone into the grains of sand of various size that we find on the seashore. It is really all burnt silicon. And quite a little depth of it, a few feet, contains as much oxygen as is to be found in all the air above it.

HOW CAN A NEWSPAPER BE MADE FOR A PENNY?

If only a single copy of a newspaper were to be made, it would cost hundreds of thousands of dollars. If everything required had to be made for the purpose, it would cost many millions of dollars in railways, and cables, and ships, and telegraphs, and telephones, and mines for the iron to make the printing presses, and countless things more. It is only because all these things exist already, and serve many other purposes as well, that it is possible to have a newspaper at any price at all.

But even granting that all these things exist, and even realising that a mere newspaper is really a product and an expression of *all* the greatest facts of civilisation, it would still be impossible to produce a single copy of a newspaper for one penny. That would not go far to pay for the printing of it, and to pay all those who send the news and write the articles.

But if a million people or even a few hundred thousands all want the newspaper, then all their pennies together will make it possible to get it. To print one copy of the newspaper may cost hundreds or millions of dollars, according as we reckon all the things it depends upon; but to print two copies will cost *less than one penny* more than to print one, and there is the secret. Merely to strike off copies costs much less than we give for them, and so, if enough of us ask for a thing, we can, by clubbing together, get for one penny what none of us, alone, could afford to pay for if he devoted his life to saving up for it.

ARE THERE ANY TWO THINGS EXACTLY ALIKE IN THE WORLD?

This is a question which has often been asked by wise men and which we can perhaps answer at last. If we want to find things that are exactly alike, we must go to what is very simple. We shall never find two religions exactly alike, or two men, or even two animals or plants. Probably even the very simplest living things are far too complicated in reality for any two to be exactly alike. We must pass away from the world of life if we wish to find complete likeness.

But we have more chance of finding what we seek in the not-living world. Two crystals of any particular substance may be quite alike so far as any of our means of judging can tell us. If we could measure finely enough, we should probably find small differences. Far more alike must be the atoms of any particular element, though we have learnt from the study of radium that atoms, even of a given element, may be young or old, and differ accordingly.

We only find perfect likeness, so far as we know, when we come down to the electrons, or "negative corpuscles," that make up all atoms of all kinds. These seem to be all exactly alike in all respects at all times, no matter from what kind of atom they have come.

WHY ARE LONDON POLICEMEN SOMETIMES CALLED "BOBBIES"?

The police force was started early in the nineteenth century, by a famous statesman called Sir Robert Peel. Since his time policemen have often been described by names recalling their founder. The best known of these is "bobby," which plainly suggests Robert, and, indeed, sometimes people are heard speaking of a policeman as "Robert." Also, not many years ago, it was still quite common to hear policemen called "peelers," on exactly the same principle.

DO CATS AND DOGS EVER CRY?

Cats and dogs may be terribly unhappy—far more than unhappy enough to make them cry if they were human. Yet we know that neither cats nor dogs ever do anything which can fairly be called crying. Of course, they have tear-glands, as we have, because the front of their eyeballs requires washing and moistening, just as our eyeballs do ; and it may be that their tear-glands produce tears more quickly at one time than at another. But it cannot be said that cats and dogs ever cry.

It would be interesting to study the kinds of animals that come nearest to mankind, and see whether crying is to be found among them. The animals nearest to us are monkeys ; and among these there are four kinds, called apes, which are much nearer to us than the others. There is no question at all that they laugh and grin. But no ape cries, and, indeed, we are the only creatures who cry. Why this is so, no one can say.

DOES ANYONE KNOW THE EXACT STABLE WHERE JESUS WAS BORN?

No, indeed. Nor is it in the least possible that that stable is now in existence. We may be sure that it was not made of great stone walls, but of very thin, slight materials, fit to last only a few years. Not only is this so, but the more we inquire into this kind of question the less certain do we become of what we thought we knew. There are people who are very sorry that this should be so, but wise people feel very differently about it. They never forget that the value of what matters can seldom depend upon what does not matter. It is certain that Something happened which gave us the divine words and thoughts and truths that we may read in the Gospels to-day. They did not come from nowhere. Their worth is no greater—it could not be greater—and no less, whether we know the stable where Jesus was born or not. *There* is the record of the Perfect Life.

DO WE SEE OURSELVES IN DREAMS?

There is no reason why we should not see ourselves in dreams, and certainly many people do see themselves. The greater number of dreams are visual—that is to say, they have to do with vision, or seeing. We do not so much *hear* things said as *see* people doing certain deeds. That is because in most brains the vision part is most important, and has been most excited during the day.

We shall be more apt to see ourselves in our dreams when our attention during the day has been very much directed to ourselves. If something has happened to us, and we have been much looked at ; if we have been singing or acting or speaking or reading ; and if we have been thinking how we looked when everyone was looking at us ; or if we have been looking at ourselves in a glass, or even looking at photographs of ourselves —in all such cases as these we shall be very liable to see ourselves in our dreams.

WHY DO WE GET EXCITED WHEN WE ARE PLEASED?

Pleasure is a state of feeling or emotion. These states of feeling may all be classified in two groups, on the pleasure side or on the pain side. All the states of feeling and emotion that lie below the neutral line, and belong to the more or less painful class, act by depressing us ; they reduce our activity. A man stricken by terrible grief may remain huddled up and motionless for hours. Pain and painful feelings lower the tide of life.

On the other hand, the pleasurable feelings stimulate ; they raise the tide of life. Just as the others lessen activity, so these increase activity. The happy man wants to jump, and dance, and shout, and throw his hat in the air. Children show all these facts more clearly than grown-up people, simply because grown-up people hold themselves in check. But what happens is really the same in both cases.

WHY IS LONDON CALLED LONDON?

Many names of things and places were given long ago, before history began to be written. Therefore we cannot be sure how the names came to be applied to some places. London is one of such names. Its beginnings take us back to the time when the inhabitants of Great Britain were savages. In those days the River Thames was much wider than it is now.

The river made a sort of lake, or lagoon, up which the tide came from the sea. The rude barbarians built a fort, which they called "the fort on the lagoon," using a Celtic word to express that meaning. The Romans, when they came to Great Britain, adopted the word, which they changed a little, so as to fit in with the Latin words that they were in the habit of using. They called it Londinium, and the changes in language since the time of the Romans have modified the word into London. Thus the history of a place may often be revealed by its name.

WHY DO THE WORLDS NOT COLLIDE AS THEY GO ROUND?

It is true that, so far as we can see at first, the worlds do not collide. We have no record of any collision in the solar system since men began to watch it. We have learnt that "the heavens are balanced" by the law of gravitation, acting together with the laws of motion. Yet we are certain that the solar system was not always as it is now, and that it is slowly changing, so that collisions are by no means impossible.

In all parts of the sky there are double stars, and these must all have been formed by collisions.

Another most important question, the answer to which probably gives the key to many facts, is the question as to what happens when a star rushes into a nebula. We are certain that this must happen again and again. Lately it has been thought that we have actually seen evidence of new stars blazing out in the heavens after being formed by collisions.

WHY IS ITALY'S SKY BLUER THAN OURS?

The sky is blue because certain tiny things in the air catch the tiny waves that form the blue part of sunlight, and then throw the blue rays to our eyes. If they did not do this the sky itself would be dark.

As Italy is nearer the Equator than we are, the sun's rays strike it more directly, and therefore more brightly. This means that there is a greater quantity of blue rays, as of all kinds of rays, coming through the Italian air; and the reason why the air is bluer is because the particles of it have more blue rays to catch and reflect to our eyes. We must always remember that when we speak of the sky being blue it is really the air that is blue; and the colour that seems to come from so far away is reflected from only a few miles away. Another reason why the sky of Italy is bluer than ours is that Italian cities do not send so much dirty smoke into the air as ours do.

WHY IS THE RAIN SOMETIMES HEAVY AND SOMETIMES FINE?

One condition must always be present before the water-vapour in the air can condense into the little liquid drops which, if they fall, we call rain. That condition is that there must be some solid nucleus, as it is called, for the water-vapour to condense upon, and it is quite possible that one of the reasons why raindrops differ in size is owing to the difference in size of the specks of solid matter—dirt or dust—round which they gather.

But we have lately learnt that sometimes electricity may act on the gases of the air, and split up the molecules of those gases, forming tiny things which are able to act as specks for water-vapour to condense upon. The size of raindrops may also be affected by the level at which the rain was formed, and when a very sudden change of the temperature has caused them to form very quickly they may be quite huge.

IS THERE A WORLD BEYOND OUR SENSES?

NOBODY who knows anything at all can doubt that there is a world beyond our senses. From the beginning of time men have felt that there were things beyond their dreams, which they can neither see nor hear nor feel. But the nature of that world is part of the mystery of life itself, and of that we know little more than the ancients knew. We speak sometimes as if the ancients were ignorant people, dwelling in barbarism; but, in truth, they were wise in many things beyond the wisdom of our own day.

They measured the earth, they had their ideas about the solar system; even the law of gravitation was not unknown to them. The mystery of life absorbed their attention as it absorbs the attention of our own thinkers; and in this matter they were hardly behind us to-day. And so we are faced with the thought that for over 2,000 years the mind of man has remained almost stationary concerning the great mystery of life. Do we know more about it than the philosophers who lived in Alexandria hundreds of years before Christ, and the philosophers who lived in Athens hundreds of years before Alexandria? Do we understand better than they did the mystery of existence, the great riddle of the universe? Are we able to prove anything more than they knew?

It is a strange thought that the whole human race may have really been standing still for more than two thousand years. So far as ultimate knowledge of life is concerned, we are indeed in exactly the same place as those far-off men of Alexandria and Athens.

But quite recently a hope has come to men that at last we are really beginning to advance. And this hope is founded on the realisation that our natural senses are not sufficient for reading the riddle of the universe. The eye, wonderful and exquisite as is its mechanism, is a clumsy vehicle of sight. The microscope reveals to us unsuspected beauty in minute things; the telescope opens to our gaze a flooding glory from immensity. "The native senses," says one American writer, "give us but a slight notion of the real world about us; they are crude, coarse, inaccurate, unreliable, prone to delude."

And so we have reached a time when man has *outgrown his senses*. This is the real miracle of our day. This is the fact, so little realised even by those who insist upon it, which proves that man is immortal. For there is in man something so infinite that it cannot be content with the finite. Man wishes to know, and sets himself to know, more than his body can possibly accomplish. Have you thought what that means? Does it not prove to you that the spirit of man is like a tenant in a house, and that man, every time that he invents a new machine, is really declaring that his house is not big enough for him. His eyes cannot read the stars, so he invents the telescope. His hands are not strong enough to lift iron, so he invents the lever. Everywhere we look, we perceive that science has only advanced where man has called to his aid mechanical inventions for improving his physical powers.

We shall all do well to reflect upon this truth. It is certainly a humbling thought that we know nothing more about the mystery of life than did the ancients of Athens and Alexandria; and it certainly looks as if the mind of man has been standing still for a great space in human history. But let it be grasped by our minds that to-day is the birth of a new era, the beginning of a fresh discovery, and we shall not be depressed by our almost total ignorance.

Man, for the first time in his long and wonderful history, has reached the need for *tools* in investigating mystery. The test-tube of the chemist holds within it secrets which will carry us far on our journey. We have had to outgrow our eyes, our ears, and our hands before we could see, hear, and handle the truth of existence, and no man can say what really lies in the world beyond our senses.

THE NEXT QUESTIONS ARE ON PAGE 5483

CONTINUED FROM PAGE 5224

HOW LADY GODIVA HELPED HER PEOPLE

WHEN Leofric the Dane was Lord of Coventry, in the year 1040, he heavily increased his taxes on the townsfolk. The people met together and sent their chief men to implore his wife, the Lady Godiva, who was greatly beloved by them for her many gracious acts to the sick and the poor, to plead with her lord to remit some of the heavy taxes.

LADY GODIVA PLEADING WITH HER HUSBAND FOR THE PEOPLE OF COVENTRY
This picture is from the painting by E. Blair Leighton, which now hangs in the City Art Gallery, Leeds.

Accordingly Lady Godiva pleaded with her lord on their behalf, but he roughly refused, saying, "Shameless are you to plead for these base, whining serfs."

"Shameless am I? Then shameless will I be indeed, and we shall see whether these serfs be base or honourable," replied she with spirit. "For I will ride through this town, clad in nought but my long tresses, if I can thus turn you from your cruel purpose."

"Ride thus, and I yield," he replied. Lady Godiva sent out word to the townsfolk of her bargain, and on the following morning she rode from end to end of the town of Coventry, and every inhabitant remained within doors as she rode, to spare their beloved benefactor any possible feeling of shame. Leofric kept his word to his wife. The burden of the people was removed, and to this day the citizens of Coventry delight to do honour to the memory of Lady Godiva.

THE NEXT STORY OF GOLDEN DEEDS IS ON PAGE 5511.

THE POET OF THE HABITANT

WE have told you something of the habitant in another part of our book (p. 5875). Dr. William Henry Drummond (1854-1907) in his poems caught the spirit of these simple, unlettered but shrewd people and gave it to us without the suspicion of ridicule. Usually they speak French, and the result of their attempts to speak English is often amusing. They pronounce many English words according to French rules, and frequently interject French words and phrases. In the poem below Dr. Drummond makes an old man speak of the days that are gone, and of the friends that he once knew. Others of his poems are amusing, but through many runs a vein of sadness.

OLE TAM ON BORD-A PLOUFFE*

I LAK on summer ev'ning, w'en nice cool win' is blowin'
An' up above ma head, I hear de pigeon on de roof,
To bring ma chair an' sit dere, an' watch de current flowin'
Of ole Riviere des Prairies as she pass de Bord-a Plouffe.

But it seem dead place for sure now, on shore down by de lan'in' —
No more de voyageurs is sing lak dey was sing alway —
De tree dey 're commence growin' w'ere shaintee once is stan'in,
An' no one scare de swallow w'en she fly across de bay.

I don't lak see de reever she's never doin' not'in'
But passin' empty ev'ry day on Bout de l'ile below —
Ma ole shaloup dat's lyin' wit' all its timber rottin'
An' tam so change on Bord-a Plouffe since forty year ago!

De ice dat freeze on winter, might jus' as well be stay dere,
For w'en de spring she's comin' de only t'ing I see
Is two, t'ree piqnique feller, hees girl was row away dere,
Don't got no use for water now, on Riviere des Prairies.

'Twas diff'rent on den summer you couldn't see de reever,
Wit' saw-log an' squar' timber raf', mos' all de season t'roo —
Two honder man an' more too — all busy lak de beaver,
An' me! I'm wan de pilot for ronne 'em down de "Soo."

Don't 'member lak I use to, for now I'm gettin' ole, me —
But still I can't forget Bill Wade, an' Guillaume Lagassé,
Joe Monferrand, Bazile Montour — wit' plaintee I can't tole, me,
An' king of all de Bord-a Plouffe, M'sieu' Venance Lemay.

Lak small boy on hees lesson, I learn de way to han'le
Mos' beeges' raf' is never float upon de Ottawaw,
Ma fader show me dat too, for well he know de channel,
From Dutchman Rapide up above to Bout de l'ile en bas.

He's smart man too, ma fader, only t'ing he got de bow-leg
Ridin' log w'en leetle feller, mebbe dat's de reason w'y,
All de sam', if he's in hurry, den Bagosh! he's got heem no leg
But wing an' fedder lak oiseau, was fly upon de sky!

O dat was tam we're happy, an' man dey're always singin',
For if it's hard work on de raf', w'y dere's your monee sure!
An' ev'ry summer evenin', ole Bord-a Plouffe she's ringin'
Wit' "En Roulant ma Boulé" an' "J'aimerai toujour."

Dere dey're comin' on de wagon! fine young feller ev'ry wan too,
Dress im up de ole tam fashion, dat I lak for see encore,
Yellin' hooraw! t'roo de village, all de horse upon de ronne too,
Ah poor Bord-a Plouffe! she never have dem tam again no more!

Very offen w'en I'm sleepin', I was feel as if I'm goin'
Down de ole Riviere des Prairies on de raf' de sam as den —
An' ma dream is only lef' me, w'en de rooster commence crowin'
But it can't do me no harm, 'cos it mak me young again.

An' upon de morning early, wen de reever fog is clearin'
An' sun is makin' up hees min' for drive away de dew,
W'en young bird want hees breakfas', I wak' an' t'ink I'm hearin'
Somebody shout "Hooraw, Bateese de raf' she's wait for you."

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Dat's voice of Guillaume Lagassé was call me
on de morning
Jus' outside on de winder w'ere you look across
de bay,
But he's drown upon de Longue " Soo," wit'
never word of warning
An' green grass cover over poor Guillaume
Lagassé.

I s'pose dat's meanin' somet'ing — mebbe I'm
not long for stay here,
Seein' all dem strange t'ings happen — dead,
frien' comin' roun' me so —
But I'm sure I die more happy, if I got jus' wan
more day here,
Lak we have upon de ole tam Bord-a Plouffe
of long ago!

THE HILLS OF SKYE *

This poem by William McLennan, the celebrated translator of French *Chansons*, is full of the yearning of the heart for home.

THERE'S a ship lies off Dunvegan
An' she longs to spread her wings,
An' through a' the day she beckons
An' through a' the nicht she sings: —
" Come awa', awa', my darling,
Come awa' wi' me and fly
To a land that's fairer, kinder
Than the moors and hills o' Skye."

O my heart! my weary heart!
There's ne'er a day goes by
But it turns hame to Dunvegan
By the storm-beat hills o' Skye.

I hae wandered miles fu' many,
I hae marked fu' many a change,
I hae won me gear in plenty
In this land sae fair but strange:
Yet at times a spell is on me,
I'm a boy once more to rin
On the hills aboon Dunvegan,
An' the kind sea shuts me in.

O my heart! my weary heart!
There's ne'er a day goes by
But it turns hame to Dunvegan
By the storm-beat hills o' Skye.

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PRAIRIE GREYHOUNDS *

This rhythmical poem is by E. Pauline Johnson, several of whose poems are included in our book. All of her work is musical.

WEST - BOUND

I SWING to the sunset land,
The world of prairie, the world of plain,
The world of promise and hope and gain,
The world of gold and the world of grain,
And the world of the willing hand.

I carry the brave and bold:
The one who works for the nation's bread,
The one whose past is a thing that's dead,
The one who battles and beats ahead,
And the one who goes for gold.

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I swing to the land to be;
I am the power that laid its floors,
I am the guide to its western shores,
I am the key to its golden doors,
That open alone to me.

EAST - BOUND

I swing to the land of morn,
The gray old East, with its gray old seas;
The land of leisure, the land of ease,
The land of flowers and fruits and trees,
And the place where we were born.

WORK

The Canadian, E. B. Brownlow, in this strong poem emphasises the joy and value of work for unselfish ends and purposes.

WORK! use all thy will, give all thy might,
Ply all thy strength,
Until the golden dawn of early light
Shall change at length
Into deep purple shades, soft, pure and bright,
That bring glad tidings of the peaceful night.

Work! while the subtle seasons onward roll
In certain course,
The ways of this frail world to help control;
That keen remorse
In life's last moment — 'ere thy deeds unroll
May strike no sudden anguish to thy soul.

Work! taking lessons from the mighty Past,
What men have done;
Yet let not those old masters hold thee fast,
They have begun;
What later souls must finish. They have cast
The first stones at earth's evil — not the last.

Work! but seek not false Ambition's flame
To light thee on;
Not so the men of wisdom ever came
In days long gone;
No sordid dream, — no bare desire for Fame
Has left on Memory's lips one worthy name.

Work! in the hope of sowing seedlings great;
Let others reap, —
That, when stern Nature bids thy step abate,
Thy body sleep,
Thy soul shall tremble not at Death's dark gate,
But calm and sure shall meet its After-Fate.

A GAELIC LULLABY

HUSH! the waves are rolling in,
White with foam, white with foam;
Father toils amid the din;
But baby sleeps at home.

Hush! the winds roar hoarse and deep —
On they come, on they come;
Brother seeks the wandering sheep;
But baby sleeps at home.

Hush! the rain sweeps o'er the knowes,
Where they roam, where they roam;
Sister goes to seek the cows;
But baby sleeps at home.

OFF RIVIERE DU LOUP *

This poem by Duncan Campbell Scott, Superintendent of Indian Education for Canada, and an author of distinction, is a perfectly painted picture.

O SHIP incoming from the sea
With all your cloudy tower of sail,
Dashing the water to the lee,
And leaning grandly to the gale;

The sunset pageant in the west
Has filled your canvas curves with rose,
And jewelled every toppling crest
That crashes into silver snows!

You know the joy of coming home,
After long leagues to France or Spain;
You feel the clear Canadian foam
And the gulf water heave again.

Between these sombre purple hills
That cool the sunset's molten bars,
You will go on as the wind wills,
Beneath the river's roof of stars.

You will toss onward toward the lights
That spangle o'er the lonely pier,
By hamlets glimmering on the heights,
By level islands black and clear.

You will go on beyond the tide,
Through brimming plains of olive sedge,
Through paler shallows light and wide,
The rapids piled along the ledge.

At evening off some reedy bay
You will swing slowly on your chain,
And catch the scent of dewy hay,
Soft blowing from the pleasant plain.

A ROYAL RACE

The Canadian poet, James McCarroll, sings in praise of homely toil, and the simple life.

AMONG the fine old kings that reign
Upon a simple, wooden throne,
There's one with but a small domain,
But, mark you, it is all his own.

And though upon his rustic towers
No ancient standard waves its wing,
Thick, leafy banners, flushed with flowers
From all the fragrant casements swing.

And here, in royal homespun, bow
His nut-brown court, at night and morn,
The bronzed Field Marshal of the Plough,
The Chancellor of the Wheat and Corn.

The Keeper of the Golden Stacks,
The Mistress of the Milking Pail,
The bold Knights of the Ringing Axe,
The Heralds of the Sounding Flail.

The Ladies of the New Mown Hay,
The Master of the Spade and Hoe,
The Minstrels of the Glorious Lay
That all the Sons of Freedom know.

And thus, while on the seasons roll
He wins from the inspiring sod
The brawny arm and noble soul
That serve his country and his God.

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THE RIVER *

The "little river" is a favourite subject for poets, and the Canadian poet, Frederick George Scott, has expressed its charm and beauty in these lines.

WHY hurry, little river,
Why hurry to the sea?
There is nothing there to do
But to sink into the blue
And all forgotten be.
There is nothing on that shore
But the tides for evermore,
And the faint and far-off line
Where the winds across the brine
For ever, ever roam
And never find a home.

Why hurry, little river,
From the mountains and the mead,
Where the graceful elms are sleeping
And the quiet cattle feed?
The loving shadows cool
The deep and restful pool;
And every tribute stream
Brings its own sweet woodland dream
Of the mighty woods that sleep
Where the sighs of earth are deep,
And the silent skies look down
On the savage mountain's frown.

Oh, linger, little river,
Your banks are all so fair,
Each morning is a hymn of praise,
Each evening is a prayer.
All day the sunbeams glitter
On your shallows and your bars,
And at night the dear God stills you
With the music of the stars.

THE ARCTIC INDIAN'S FAITH

In this little poem, Thomas D'Arcy McGee has shown us the identity of the faith of the Indian and the faith of the white man.

WE worship the spirit that walks unseen
Through our land of ice and snow:
We know not his face, we know not his place,
But his presence and power we know.

Does the buffalo need the pale-face's word
To find his pathway far?
What guide has he to the hidden ford,
Or where the green pastures are?

Who teacheth the moose that the hunter's gun
Is peering out of the shade?
Who teacheth the doe and the fawn to run
In the track the moose has made?

Him do we follow, Him do we fear —
Spirit of earth and sky;
Who hears with the Wapiti's eager ear
His poor red children's cry;

Whose whisper we note in every breeze
That stirs the birch canoe;
Who hangs the reindeer moss on the trees
For the food of the caribou.

That spirit we worship who walks, unseen,
Through our land of ice and snow:
We know not his face, we know not his place,
But his presence and power we know.

* By permission of the author.

THE PLAINS OF ABRAHAM

The poet, Charles Sangster, imagines himself standing on the Plains of Abraham and watching enacted that fearful combat which ended in the fall of Quebec, with the loss of Canada to the French, and the death of the famous British and French generals, Wolfe and Montcalm. He contrasts the glory of war with the splendour of peace.

I stood upon the plain
That had trembled when the slain
Hurled their proud defiant curses at the battle-heated foe;
When the steed dashed right and left
Through the bloody gaps he cleft,
When the bridle-rein was broken and the rider was laid low.

What busy feet had trod
Upon the very sod
Where I marshalled the battalions of my fancy to my aid!
And I saw the combat dire,
Heard the quick incessant fire,
And the cannons' echoes startling the reverberating glade.

I heard the chorus dire,
That jarred along the lyre
On which the hymn of battle rung, like surgings of the wave,
When the storm at blackest night
Wakes the ocean in affright,
As it shouts its mighty pibroch o'er some shipwrecked vessel's grave.

I saw the broad claymore
Flash from its scabbard, o'er
The ranks that quailed and shuddered at the close and fierce attack;
When victory gave the word
Auld Scotia drew the sword,
And with arms that never faltered drove the brave defenders back.

I saw two great chiefs die,
Their last breaths like the sigh
Of the zephyr-sprite that wantons on the rosy lips of morn;
No enemy-poisoned darts,
No rancour in their hearts,
To unfit them for their triumph over death's impending scorn.

And, as I thought and gazed,
My soul exultant praised
The power to whom each mighty act and victory are due,
For the saint-like peace that smiled
Like a heaven-gifted child,
And for the air of quietude that steeped the distant view.

Oh, rare divinest life,
Of peace compared with strife!
Yours is the truest splendour and the most enduring fame,
All the glory ever reaped
Where the fiends of battle leaped
Is harsh discord to the music of your undertoned acclaim.

THE COLOURS OF THE FLAG *

Every Canadian boy would do well to memorise this poem by Frederick George Scott. It voices the highest patriotism, and the truest courage.

What is the blue on our flag, boys?
The waves of the boundless sea,
Where our vessels ride in their tameless pride,
And the feet of the winds are free;
From the sun and smiles of the coral isles
To the ice of the South and North,
With dauntless tread through tempests dread
The guardian ships go forth.

What is the white on our flag, boys?
The honour of our land,
Which burns in our sight like a beacon light,
And stands while the hills shall stand;
Yea, dearer than fame is our land's great name,
And we fight, wherever we be,
For the mothers and wives that pray for the lives
Of the brave hearts over the sea.

What is the red on our flag, boys?
The blood of our heroes slain
On the burning sands in the wild waste lands
And the froth of the purple main.
And it cries to God from the crimsoned sod,
And the crest of the waves outrolled,
That He send us men to fight again
As our fathers fought of old.

We'll stand by the dear old flag, boys,
Whatever be said or done,
Though the shots come fast, as we face the blast,
And the foe be ten to one; —
Though our only reward be the thrust of a sword
And a bullet in heart or brain,
What matters one gone, if the flag float on
And Britain be lord of the main!

THE CANADIAN SONG-SPARROW *

The Canadian poet and statesman, Sir James Edgar, is the author of this poem, which gives another version of the sparrow's song.

From the leafy maple ridges,
From the thickets of the cedar,
From the alders by the river,
From the bending willow branches,
From the hollows and the hillsides,
Through the lone Canadian forest
Comes the melancholy music,
Oft repeated, never changing,
"All-is-vanity-vanity-vanity."

Where the farmer ploughs his furrow,
Sowing seed with hope of harvest,
In the orchard white with blossom,
In the early field of clover
Comes the little brown-clad singer
Flitting in and out of bushes,
Hiding well behind the fences,
Piping forth his song of sadness —
"Poor-hu-manity-manity-manity."

* By permission of the author.

A HYMN OF EMPIRE*

Somewhat in the spirit of Kipling's great "Recessional" is this Hymn of Empire by Frederick George Scott. Where the former poem speaks the word of caution, this voices the desire for expansion of empire.

LORD, by whose might the Heavens stand,
The Source from whence they came,
Who holdest nations in Thy hand,
And call'st the stars by name,
Thine ageless forces do not cease
To mould us as of yore —
The chiselling of the arts of peace,
The anvil-strokes of war.

Then bind our realms in brotherhood,
Firm laws and equal rights,
Let each uphold the Empire's good
In freedom that unites;
And make that speech whose thunders roll
Down the broad stream of time,
The harbinger from pole to pole
Of love and peace sublime.

Lord, turn the hearts of cowards who prate,
Afraid to dare or spend,
The doctrine of a narrower State
More easy to defend;
Not this the Watchword of our sires
Who breathed with ocean's breath,
Not this our spirit's ancient fires
Which nought could quench but death.

Strong are we? Make us stronger yet;
Great? Make us greater far.
Our feet antarctic oceans fret,
Our crown the polar star;
Round Earth's wild coasts our batteries speak,
Our highway is the main;
We stand as guardian of the weak,
We burst the oppressor's chain.

Great God, uphold us in our task,
Keep pure and clean our rule,
Silence the honeyed words which mask
The wisdom of the fool.
The pillars of the world are Thine;
Pour down Thy bounteous grace,
And make illustrious and divine
The sceptre of our race.

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DE BELL OF ST. MICHEL*

William Henry Drummond, the "Poet of the Habitant," is the author of this charming and tender poem. His familiarity and sympathy with the life of the French-Canadians has made him their interpreter to English-speaking people.

Go 'way, go 'way, don't ring no more, ole bell of Saint Michel,
For if you do, I can't stay here, you know dat very well,
No matter how I close ma ear, I can't shut out de soun',
It rise so high 'bove all de noise of dis beeg Yankee town.

An' w'en it ring, I t'ink I feel de cool, cool summer breeze
Dat's blow across Lac Peezagonk, an' play among de trees,
Dey're makin' hay, I know mise'f, can smell de pleasant smell
O! how I wish I could be dere to-day on Saint Michel!

It's fonny t'ing for me, I'm sure, dat's travel ev'ryw'ere,
How moche I t'ink of long ago w'en I be leevin' dere;
I can't 'splain dat at all, at all, mebbe it's naturel,
But I can't help it w'en I hear de bell of Saint Michel.

Dere's plaintee t'ing I don't forget, but I remember bes'
De spot I fin' wan day on June de small san'piper's nes'
An' dat hole on de reever w'ere I ketch de beeg, beeg trout
Was very nearly pull me in before I pull heem out.

An' leetle Elodie Leclaire, I wonder if she still
Leev jus' sam' place she use to leev on 'noder side de hill,
But s'pose she marry Joe Barbeau, dat's alway hangin's roun'
Since I am lef' ole Saint Michel for work on Yankee town.

Ah! dere she go, ding dong, ding dong, its back, encore again
An' ole chanson come on ma head of "a la claire fontaine,"
I'm not surprise it soun' so sweet, more sweeter I can tell
For wit' de song also I hear de bell of Saint Michel.

It's very strange about dat bell, go ding dong all de w'ile
For when I'm small garcon at school, can't hear it half a mile;
But seems more farder I get off from Church of Saint Michel,
De more I see de ole village an' louder soun' de bell.

O! all de monee dat I mak' w'en I be travel roun'
Can't kip me long away from home on dis beeg Yankee town,
I t'ink I'll settle down again on Parish Saint Michel,
An' leev an' die more satisfy so long I hear dat bell.

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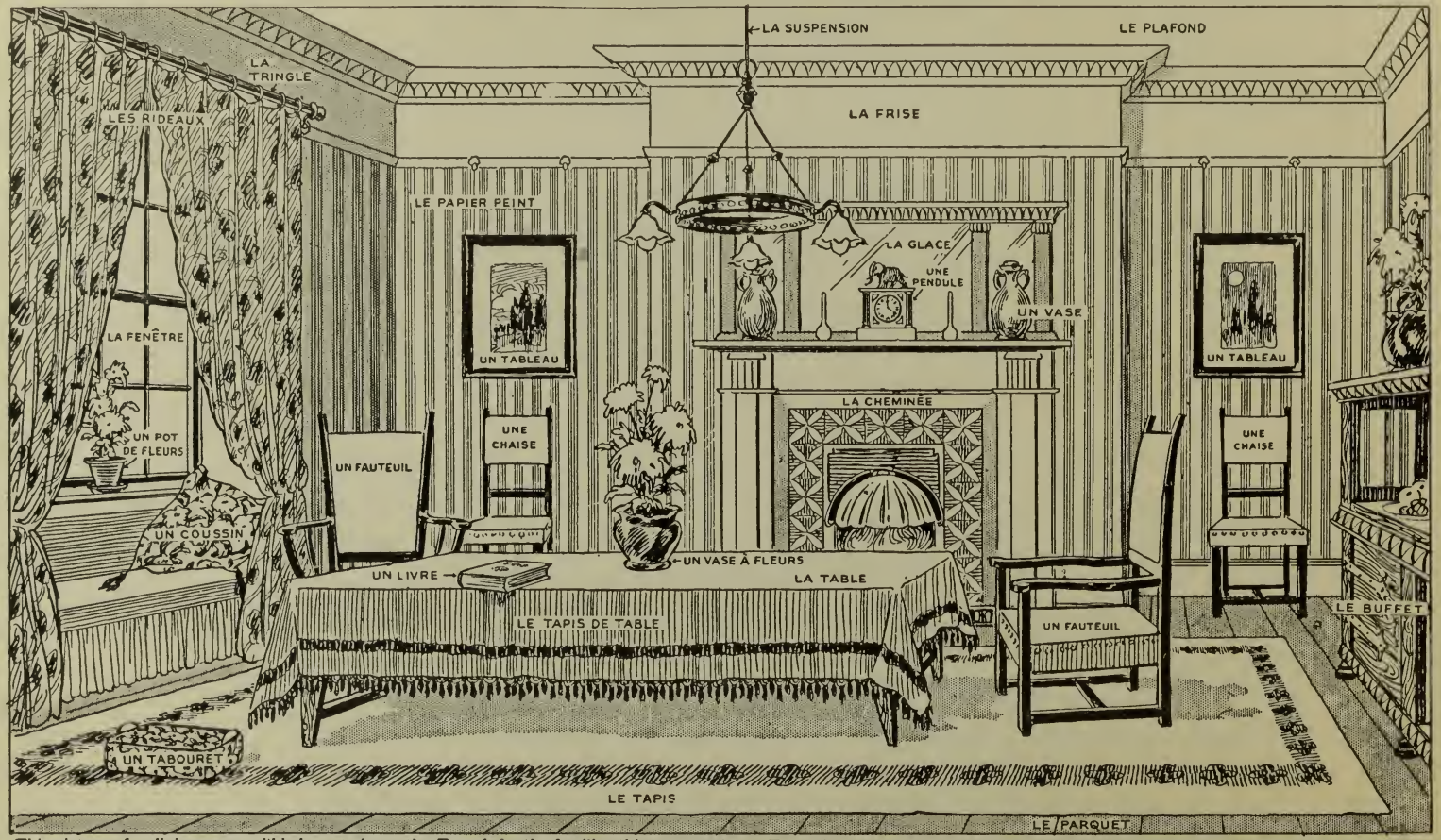
HIAWATHA'S BROTHERS

THEN the little Hiawatha
Learned of every bird its language,
Learned their names and all their secrets,
How they built their nests in summer,
Where they hid themselves in winter,
Talked with them whene'er he met them,
Called them "Hiawatha's Chickens."
Of all beasts he learned the language,
Learned their names and all their secrets,
How the beavers built their lodges,
Where the squirrels hid their acorns,
How the reindeer ran so swiftly,
Why the rabbit was so timid,
Talked with them whene'er he met them,
Called them "Hiawatha's Brothers."

A FRENCH LESSON IN PICTURE: THE NAMES OF FAMILIAR THINGS IN A DINING-ROOM



This picture of a dining-room will help us to learn the French for the familiar things around us. The objects named are the ceiling, electric-light pendant, frieze, wall-paper, curtain-pole, curtains, looking-glass, clock, vase, fireplace, picture, chair, armchair, window, flower-pot, cushion, table, table-cloth, book, flower-vase, sideboard, footstool, carpet, and flooring.

SIR WALTER RALEIGH WRITING IN HIS DUNGEON AT THE TOWER

SIR WALTER RALEIGH

THE FOUNDER OF THE BRITISH EMPIRE

We should keep a warm place in our hearts for the memory of Sir Walter Raleigh, who tried to found a British Empire over the seas. It was in his great, far-seeing mind that there dawned the idea of carrying people from these islands to build up new Britains in strange and savage lands. He was a warrior, an explorer, a historian, and a poet. It is true that he was far from perfect. He lived in wild and lawless times, when it was deemed not dishonourable for English noblemen to send ships to sea to act as pirates. If they succeeded, they were honoured for their wrong-doing ; but the great crime was to fail.

Raleigh was born at Hayes, near Budleigh Salterton, Devonshire, in 1552. The little Walter was a born hero, and loved to haunt the beach at Budleigh, there to feast his mind on stories of strange lands and strange peoples across the wide waters, poured into his willing ears by bold sailors resting in the little town after their voyages.

Born to an adventurous life, Raleigh had talent for scholarship also, and we find him, when only fifteen years of age, a student at Oxford University, after he had done well at the schools round about his home. He stayed about three years at Oriel College, and then, at seventeen, he opened his career of daring. He went to France and fought in the Protestant army, and saw several battles. He remained abroad five years, and was there during the frightful massacre on St. Bartholomew's Eve, and witnessed horrors which possibly prompted him to denounce religion persecution, as he did in later years.

He never flinched from shedding blood when he thought that severe measures were necessary. A rebellion sprang up in Ireland, and he went there in search of adventures. He had by this time followed up his adventures in France by making a voyage with Sir Humphrey Gilbert, and by taking a part, it is believed, in the wars in the Low Countries. He was, therefore, a complete soldier when he went to Ireland in 1580 to help in putting down the rebellion.

Some 600 Spaniards and Italians had landed in Ireland, and had encouraged the Irish to rebel against England. They had garrisoned a fort at Smerwick, and when they were conquered, Raleigh was ordered to punish them, and he executed every one of them. That seems a terrible crime in our days, but it was deemed then quite the right thing to do.

During this campaign Raleigh got to know Edmund Spenser, the great poet, and afterwards succeeded in

CONTINUED FROM PAGE 5322

getting him introduced at the English court. Meantime, however, Raleigh, though he had once or twice appeared at the court of Elizabeth, had not yet been recognised there. After the Irish adventure, however, he was sent to London with a report of the battle, and, being befriended by the Earl of Leicester, who was at this particular period a favourite of Queen Elizabeth, he himself was soon greatly favoured by the queen.

How Queen Elizabeth Walked over the Rich Robe of Sir Walter Raleigh

Queen Elizabeth was at this time nearly fifty years of age; Raleigh was not yet thirty. He was tall and handsome, with dark, flowing hair, and a complexion like that of a Spanish beauty. He was graceful and active, and a man of great physical power, known to be as brave as a lion; he was a charming poet, a man of great learning, and gifted with fiery eloquence.

What wonder, then, that he should win the heart of the vain though able queen? The story of their first meeting is well known, but we may recall it. The queen, on leaving her palace, had found a muddy puddle lying before her. Raleigh, who saw her distress, instantly stripped off the rich plush robe which he was wearing, and spread it before her so that she walked dry-shod over the mud. Very soon Raleigh became prime favourite of the queen, and she made his fortune. She allowed him to levy taxes upon wines and woollen cloths; she made him a vice-admiral and warden of the royal mines in Cornwall. She knighted him, and he was elected a member of Parliament. For five years Raleigh had no rival at court, and in this time he heaped up riches, and spent them as liberally as they came.

The First Members of the Household called the British Empire

It was in 1584 that he fitted out at his own cost an expedition to explore the American coast north of Florida. The queen agreed to the plan, though she could not bear to let Raleigh himself go. The sailors of his fleet had good fortune, and took possession for Raleigh of a great area of land which Queen Elizabeth, "the Virgin Queen," herself named Virginia. Next year Raleigh sent out a strong fleet, bearing people who were to settle down in the new land, the first colonists ever sent out by England. They settled on Roanoke Island, now in North Carolina. Up to that time Great Britain did not own a foot of land beyond her own borders. Raleigh's scheme gave her the foundation of her Colonial Empire. The venture was not a success. Several ships were sent out. One hundred men remained for a year, and then were brought home. Next, fifteen men were left, but they disappeared. After that a party of 108 colonists, of whom seventeen were women, was despatched, but these disappeared, and were never heard of again.

Raleigh then gave up the effort. It had cost him $200,000 out of his own pocket, an enormous sum in the money of that age, and, so far as he was concerned, the scheme was a failure. But it gave the people of Great Britain a new idea. The importance of oversea possessions began to be realised, and there grew up the idea of a big fleet of ships, both for trade and for war, which has since made that country the greatest naval power the world has ever seen.

The First Potatoes Grown in Ireland & the First Tobacco Grown in England

A cloud now appeared upon the horizon of Raleigh. A new court favourite appeared in the person of the Earl of Essex, and Raleigh, who could not tolerate a rival in the favour of his sovereign, quitted the court and went to Ireland. His visit was important to Ireland. The queen had given him an estate there, and in his garden he planted the first potatoes ever grown in that country. These had been brought back, with some tobacco, by some of the men whom he had sent to the New World. Potatoes have proved of immense importance to the whole of Europe, but to no other country are they more vital as food than to poverty-stricken Ireland. Raleigh was the first man of rank to smoke tobacco in England, and the first tobacco ever grown there was in the garden of Lord Burghley, in the Strand.

The coming of the King of Spain's great Armada soon recalled Raleigh from Ireland. He busied himself in preparing the defence of the coast, and he, himself, spent a week on the fleet which helped to destroy the ships sent by the proud Spanish sovereign for the destruction of England. Gradually Raleigh recovered his lost position at court, and persuaded the queen to fit out a fleet to attack the Spaniards. She would not let *him* go, but his valiant cousin, Sir Richard Grenville, went, and

his little ship, the Revenge, left to itself, fought a marvellous battle against the whole Spanish fleet.

Raleigh afterwards celebrated the feat in a magnificently written narrative, and 300 years afterwards his story formed the foundation upon which Tennyson based his poem, "The Revenge." Raleigh now fitted out, largely at his own cost, another and larger fleet for the same purpose, and was allowed by the queen to go out with it to a certain point, to start it well on its way. When he returned to London, he was immediately cast into the Tower. The Raleigh had to be released from prison to go down to Dartmouth and keep order while the affairs of the prize-ship were settled. For this he was given his liberty and $180,000, only $10,000 more than he had spent on the expedition. He quietly married the lady of his love, and settled down at Sherborne, in Dorsetshire, where he had leased an estate.

But his active mind was soon busy with larger schemes than house-building and tree-planting. There were many rumours of a city of fabulous wealth in South America. Prevented from going

THE POET SPENSER READING HIS FAMOUS POEM. "THE FAERIE QUEENE," TO SIR WALTER RALEIGH

reason was that, while enjoying the favour of the queen, he had dared to fall in love with Elizabeth Throgmorton, one of the queen's maids of honour. The old queen, who had had so many lovers, could not endure such a thing in her favourite, and kept him a close prisoner for six months, treating the unfortunate Elizabeth Throgmorton in the same way.

Raleigh's imprisonment was ended in a strange way. The fleet which he had sent out brought home a richly laden prize. So great was the disorder among the dishonest people of the port that himself, Raleigh sent out a ship to seek this city of silver and gold, and though from this he got no definite news, he was sufficiently satisfied to set out in search of it himself. He reached the River Orinoco, and in small boats went up its course, and along some of its tributaries, fighting against tremendous currents, and against sickness and privation. He was compelled to turn back, but brought with him quartz containing gold, and also the first piece of mahogany ever seen in England. When he got back, his enemies declared that the whole story of his exploration

was false. To prove his case, he wrote a splendid book called "The Discovery of Guiana," that being the name by which the country now called Venezuela was then known. He drew maps showing his route, and long after his death all his statements were proved to be true. A gold-mine of which he spoke was actually discovered in 1849. Raleigh's next exploit was in an expedition against Cadiz. He was not the leader, but it was upon his advice that the two leaders acted, and the action was a mighty triumph for his military genius. In another naval action, under Lord Essex, he again distinguished himself. Indeed, had it not been that the queen was at first so fond of him that she would not let him go out on the earlier expeditions, Raleigh's career on the sea must have been the greatest of the age. Raleigh's success in the second action made Essex, his old enemy, jealous. Essex never forgave him, and after many intrigues he declared that Raleigh had tried to have him murdered, a story that proved to be utterly false.

How Raleigh was tried for his life on a charge of treason

Essex was eventually executed for rebellion, but Raleigh's enemies remained many and powerful. They had their way at last when, in 1603, Elizabeth died, and James VI. of Scotland—a man unworthy of the least respect—became King James I. of England. Raleigh's enemies pretended to James that Raleigh had tried to prevent him from coming to the English throne, and James removed him from all his offices. Soon Raleigh was brought to trial on a false charge of treason and conspiracy. Raleigh behaved magnificently, with the eloquence of the scholar and orator, and with the dignity and firmness of a hero, but he was condemned to death.

The trial created a great impression. Many men had been offended by his haughty ways, but at this trial they remembered what he had done for the honour and glory of the country. One who had hated him said: "When the trial began I would have gone a hundred miles to see Raleigh hanged; before the trial closed I would have gone a thousand miles to save his life."

Raleigh was taken back to the Tower, but the king dared not carry out the sentence of death. He left Raleigh to languish in prison. His wife and family were allowed to live there, too, on paying $1,000 a year. Here Raleigh was visited by the great scientists and poets and scholars of the day, some of whom were, like himself, prisoners in the Tower. His best friend, however, was Prince Henry, the eldest son of King James, a fine young prince. He loved Raleigh, and declared: "No man but my father could keep such a bird in such a cage."

How the great traveller wrote the history of the world in a dungeon

For the guidance of the prince, Raleigh wrote some notable works on politics and statesmanship, and began for him his famous "History of the World." This ran to 1,300 pages before the young prince died, and Raleigh then lost heart, and left it unfinished. In it is some of his noblest writing, but it was so frank that the king had it suppressed, because he said it spoke "too saucily of kings."

Raleigh had a little laboratory in the Tower, which he made out of a poultry-house, and in this he conducted many scientific experiments. He found out how to get pure salt from sea-water—an art of which we hear little more until 300 years afterwards. For thirteen years he was kept a prisoner, and men grieved for him. The thought of this great traveller, warrior, and scholar cramped in the little cell at the Tower, which we may see to-day, made their hearts bleed.

In 1616 he was released to go on another treasure-hunting expedition up the Orinoco. He was allowed to leave prison on the condition that he should bring back to England at least half a ton of gold ore similar to the piece he had previously brought. "It is very difficult," answered Raleigh, "for any man to find the same acre of ground again in a country desolate and overgrown which he hath seen but once, and that sixteen years since." Still, he was willing to try.

The last scene in the life of one of the greatest Englishmen

His crew was composed for the most part of bad characters, and the expedition was a hopeless failure, dogged by storms and sickness. The attempt to find the gold-mine failed. But he dared not think of returning home empty-handed. He thought that he would, as in the old days, capture some Spanish treasure-ships. "They do not call men pirates who capture millions of money," he argued, in the manner of the times. But the men would not follow him, and he had to return home penniless. There had been some fighting between his men and the Spaniards, and as

RALEIGH'S FIRST MEETING WITH QUEEN ELIZABETH

Sir Walter Raleigh was a man of quick decision and resource, and the story of his first encounter with Queen Elizabeth is typical of his character. The queen had just come out of her palace, and seeing a puddle she hesitated about stepping into it. In a moment Raleigh laid his plush coat in the puddle for Elizabeth to walk on.

there was peace at this time between England and Spain, this fighting was declared to be a crime worthy of death. So Raleigh was again cast into the Tower, and led forth to execution at Westminster on October 29, 1618. He was courageous and dignified to the last.

It has been said that on the last night of his life he wrote a beautiful poem, for which his name will be remembered, but the poem was written long before the last night came, and not in view of the terrible fate which befell him. The calm resignation with which he met his unjust fate, however, was in perfect keeping with the spirit of this little poem, which Raleigh might well have composed in his last hour. The poem is called "The Conclusion," and has only eight lines:

Even such is Time, that takes in trust
Our youth, our joys, our all we have,
And pays us but with earth and dust;
Who in the dark and silent grave,
When we have wandered all our ways,
Shuts up the story of our days;
But from this earth, this grave, this dust,
My God shall raise me up, I trust.

As he laid his head on the block, someone said that he ought to kneel with his head towards the east. "What matter," said Raleigh—"what matter how the head lie so the heart be right?"

So perished one of the greatest men of the great days of Elizabeth. He was not a perfect man; no man is perfect. He had grave faults, but they were the faults of his time. With all his failings he was a hero and a scholar of the highest type. In happier days he might have become famous throughout the world for science, literature, and poetry. With a queen less anxious to keep him at court, he would have been immortal as an explorer and an admiral. As it was he left a record for gallantry and learning equalled by very few men of any country.

TWO MEN I HONOUR

Two men I honour, and no third. First, the toil-worn craftsman that with earth-made implement laboriously conquers the earth and makes her man's. Venerable to me is the hard hand—crooked, coarse; wherein notwithstanding lies a cunning virtue, indefeasibly royal, as of the sceptre of this planet. Venerable, too, is the rugged face, all weather-tanned, besoiled, with its rude intelligence; for it is the face of a man living manlike. Oh, but the more venerable for thy rudeness, and even because we must pity as well as love thee! Hardly-entreated brother! For us was thy back so bent, for us were thy straight limbs and fingers so deformed: thou wert our conscript, on whom the lot fell, and fighting our battles wert so marred. For in thee, too, lay a God-created form, but it was not to be unfolded; encrusted must it stand with the thick adhesions and defacements of labour, and thy body was not to know freedom. Yet toil on, toil on: *thou* art in thy duty, be out of it who may; thou toilest for the altogether indispensable, for daily bread.

A second man I honour, and still more highly, him who is seen toiling for the spiritually indispensable; not daily bread, but the bread of life. Is not he, too, in his duty; endeavouring towards inward harmony; revealing this, by act or by word, through all his outward endeavours, be they high or low? Highest of all when his outward and his inward endeavour are one, when we can name him artist, not earthly craftsman only, but inspired thinker, who with heaven-made implement conquers heaven for us. If the poor and humble toil that we have food, must not the high and glorious toil for him in return, that he have light, have guidance, freedom, immortality? These two, in all their degrees, I honour; all else is chaff and dust, which let the wind blow whither it listeth.

Unspeakably touching is it, however, when I find both dignities united; and he that must toil outwardly for the lowest of men's wants is also toiling inwardly for the highest. Sublimer in this world know I nothing than a peasant saint, could such now anywhere be met with. Such a one will take thee back to Nazareth itself; thou wilt see the splendour of heaven spring forth from the humblest depths of earth, like a light shining in great darkness.

THOMAS CARLYLE.

THE NEXT STORY OF MEN AND WOMEN IS ON PAGE 5468.

This picture shows the beginning of the great dam at Assouan, which has turned the banks of the Nile into a flourishing garden by storing up the waters of the river for use in time of drought.

MAKING THE DESERT BLOSSOM

CONTINUED FROM PAGE 5371.

We are proud of our great poets and painters, we exalt as heroes our great soldiers and sailors, we exalt still higher our great seers and prophets. We are apt to forget the engineer. And yet, without the engineer, the human race could hardly have moved from a state of barbarism.

If we think what the earth was like in the dawn of human history, we see how enormous is our debt to the engineer. To begin with, the earth was covered by a dense forest; roads did not exist. Rivers ran where they listed. Mountains obstructed the way. The sea forced itself where it would.

In the midst of this savage earth was man, the weakest and most defenceless of creatures, not fleet enough to escape from the tiger, not powerful enough to fight with the lion, not strong enough to withstand the severities of Nature. But he had one gift greater than all other creatures, *cunning*, and this cunning became reason, and with this reason man was able to withstand Nature.

Is there not something splendid in the thought of our earliest ancestors pitting themselves, in the midst of ignorance, against the terrible forces of Nature? The superstitious priests would have had the race tremble and cower before the thunder and lightning, would have kept man on his knees in a dumb terror before the awful mystery of death. But there was in the first man who looked about him, and studied things with quiet eyes, the soul of the engineer. He saw that things could be altered. He set himself to alter them.

And the result is written on the earth in a thousand ways. The earth is, indeed, the work of God's hands, but God has used man's hands to perfect it. Nature would have destroyed our race many centuries ago if man had not set himself to govern and control the earth.

Look at what man has done. Across the earth are stretched beautiful valleys and rich pastures where cattle, such as the first men of our race never dreamed of seeing, feed in security both from wild beasts and from disease. Roads run from north to south, and from east to west, on which wheels, tyred with rubber, may travel at the rate of express trains.

Towns that are far removed from river and sea send their commerce to other lands along wide canals which man has dug out of the earth. Huge mountain ranges, over which Napoleon had to drag his cannon, are now pierced by tunnels, and trains, lighted by electricity, run through from end to

end. Ports threatened by the tempests of ocean are guarded by breakwaters, and ships lie within immense harbours safe from the fury of the waves.

Rocks which threatened destruction in the midst of the sea have become messengers to sailors, holding aloft a flame of light which shows the way and warns of danger. Cities have vast stores of pure water brought to them from mountains hundreds of miles away.

HOW THE ENGINEER HAS TRANSFORMED THE FACE OF THE EARTH

The mighty power of waterfalls, for centuries wasted and profitless, has been harnessed by the engineer to the service of men, and now makes electric light and drives electric cars in cities many miles from the thunder of its waters.

Across wide and fast-flowing rivers the engineer has thrown his bridges, and sent his trains running in safety from shore to shore, linking up places eternally separated. And under the ocean, and in the invisible air, man can send messages from continent to continent, as quickly as he can go from one room to another.

But there is one aspect of the earth's surface which has defied man—the desert. What can man do with sand? Under a pitiless, burning sun, rolling away into distance for ever and ever, lie over three and a half million square miles of desert—the Sahara, as big as all Europe. What can man do there but bow his head and marvel at the work of Nature? Half stifled by the dust, half blinded by the glare, and half frightened by the terror of this immense waste of the earth's surface, generations of men have gone by, leaving it there as a miracle of God, something that passes the power of man to alter, or the wit of man to comprehend.

THE MAN WHO HAS MADE THE DESERT BLOSSOM AS THE ROSE

The Nile overflows its banks and leaves a coating of mud over a part of this desert. The people throw seed upon this slime, and wait for it to grow. But when the Nile failed to overflow its banks, famine marched through the land, and men used to die like flies.

The engineer came to the desert, looked long at it, looked longer still at the mighty Nile, and then said: "This can be altered!"

While the desert fainted for moisture, the Nile was carrying millions of tons of water to the sea. The engineer said: "I will stop that waste of water!" And then followed one of the mightiest works ever undertaken by the children of men. Two great dams were built across the Nile. There was a woeful outcry from sentimental travellers. "You will drown the beautiful ruins of Egypt; you will spoil the wonder of her scenery!" But the engineer worked on. His object was to convert ruin into life; not to guard the pillars of an empty temple, but to set up such a monument to the strength and power of man as should stand the wonder of the ages. And this he has accomplished. He has made the desert blossom and bring forth food for the use of man.

Can we think of anything more romantic than the building of these immense dams? Thousands of millions of tons of water have been "bottled" by the engineer. A telegram comes saying that water is wanted in a certain province. A button is touched; gigantic gates open, and the required amount of water flows out as easily as when we turn on a tap in our house. Yes; and how has the great wonder been accomplished?

THE ROMANCE OF THE BRITISH ENGINEER IN THE LAND OF THE PHARAOHS

Camels, like those which crossed the desert with spice in the days of Pharaoh, have been harnessed by the British engineer to this almost superhuman task; they have come across the desert with the implements he needed, and have stood beside the steam-engine, in the midst of masonry and stacks of steel and iron, listening to the clatter of the hammers, the scream of the engines, the shunting and bumping of the trucks.

Ten thousand descendants of the ancient Egyptians have worked under their British instructors in the building of these dams, chattering in their ancient language as they carried steel forged in modern England. What an amazing romance it all is!

Perhaps it is best for the world that the engineer should not be honoured as a great hero. He is a man who must keep a level head. He can think best when he is least disturbed. And he has wonderful work to do.

But we do well to remind ourselves sometimes how enormous is the debt which civilisation owes to this quiet, thinking man of action, who never dreams, never dwells in the clouds, but makes the earth a happier and a more comfortable habitation for mankind.

HARNESSING 1,000 MILLION TONS OF WATER

The great dam across the River Nile at Assouan, which stores up a thousand million tons of water for use as it is required, is one of the engineering wonders of the world, and is certainly the most wonderful work which Sir John Aird, the famous British contractor, has ever carried out. It took over four years to build, and contains more than a million tons of masonry and 75,000 tons of cement. Much of the granite used came from the same quarries as the stone for the facing of the Great Pyramid, which contains five times as much masonry as the dam. Assouan was selected for the dam because the river is there broken up by a number of islands and runs through several channels. Temporary barriers were built above and below the site selected for the great dam, and the water in between was pumped out so that the foundations could be laid in the river-bed. The foundations were also laid deep on the islands, as shown here, for the dam is built straight across river and islands.

SHUTTING OUT THE RIVER FROM ITS BED

The temporary barriers to close the channels were built up by toppling huge stones into the river, and sometimes great blocks weighing four or five tons were carried away like pebbles by the rush of water. Railway cars, loaded with boulders and bound round with steel ropes, were hurled bodily into the water. In this way the river was diverted from the different channels in turn. Here a channel of the river is being closed.

The narrower the channel became, the more difficult was the task of closing it, owing to the stronger rush of the water. This picture shows a channel almost closed. Masses of rock, four or five tons in weight, are being let down by a crane. Finally, the trucks full of stones were thrown into the gap, and the barrier completed.

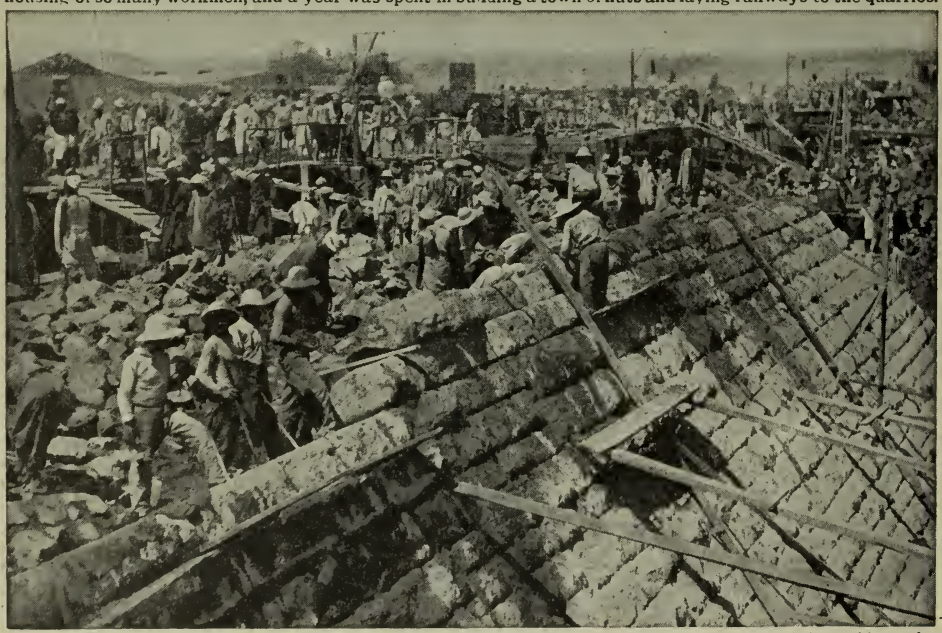
DIGGING A CHASM IN THE BED OF THE RIVER

The stone barrier was supported by a barrier of sand, and another sand barrier was built down stream, 1,500,000 bags of sand being used. It was not necessary to make the down-stream barrier so strong as the up-stream one because the force of the water was already broken. Here we see one barrier completed and another nearly finished.

As soon as the water was pumped out of the river between the two barriers, work was begun upon the foundations of the dam, as shown here. So unstable was the river-bed that the engineers had to dig forty feet deeper than they had expected, in order to get a sure foundation. Another dam to regulate the water stored up at Assouan was at the same time built at Assiout, 100 miles lower down the river. Here 17 steam-pumps pumped from between the temporary barriers 73,000,000 gallons of water daily, sufficient for a city of 2,000,000 inhabitants.

BUILDING THE STRONGEST WALL IN THE WORLD

Here we see building operations on one of the islands. Twenty thousand labourers were employed upon the dam, and work went on day and night, huge arc lamps being used after dark. Great preparations were needed for the housing of so many workmen, and a year was spent in building a town of huts and laying railways to the quarries.



The dam, which is the strongest wall in the world, is a mile and a quarter long and a hundred feet wide at the foundations. The height varies, but the greatest height from the foundations to the top, as originally built, is 130 feet. The south side of the dam, against which the stored water presses, is perpendicular, but on the north side it is slanting, as shown here, so that the dam may resist the enormous pressure of water on its other side.

WORKING IN THE BED OF THE RIVER

This picture shows how the labourers carried the blocks of granite from the quarries to the railway. Everything possible was done for the comfort of the workers. When the Alexandria canal was built, seventy years ago, 20,000 workmen died in the trenches, chiefly from sunstroke, but at Assouan scarcely a man died from this cause. Tents were set up at intervals, and when a man was overcome by the heat he was immediately taken to a tent and placed in an iced water bath, and a doctor was telephoned for. Telephones were fixed in all these tents.

Here we see the busy scene at the bottom of one of the channels of the river, which is kept dry by the temporary barriers and the steam-pumps. Trains from the quarries run on to the bridge, from which the blocks of granite are lowered to the dam. It would have been impossible to build the Assouan dam in this way if the Nile had had more than one flood a year, as work was impossible during the flood.

PILING UP A MILLION TONS OF STONE

This is the same place as that shown in the lower picture on page 5405, but this photograph was taken a few days later, and we see how rapidly the work progressed. The dam is faced on both sides with exceptionally hard granite, properly shaped, while the inside is formed of rubble, or rough blocks of different sizes and shapes.

As the flood time approached, the need for rapid work increased, so that the dam might be sufficiently substantial to resist the waters. On the left of this picture can be seen some of the sluices, or openings, of which the dam has 180. The huge gates that close these sluices average twenty feet in height and six and a half feet in width, and they withstand a pressure from the water of 210 tons. Yet the gates can be opened or closed quite easily.

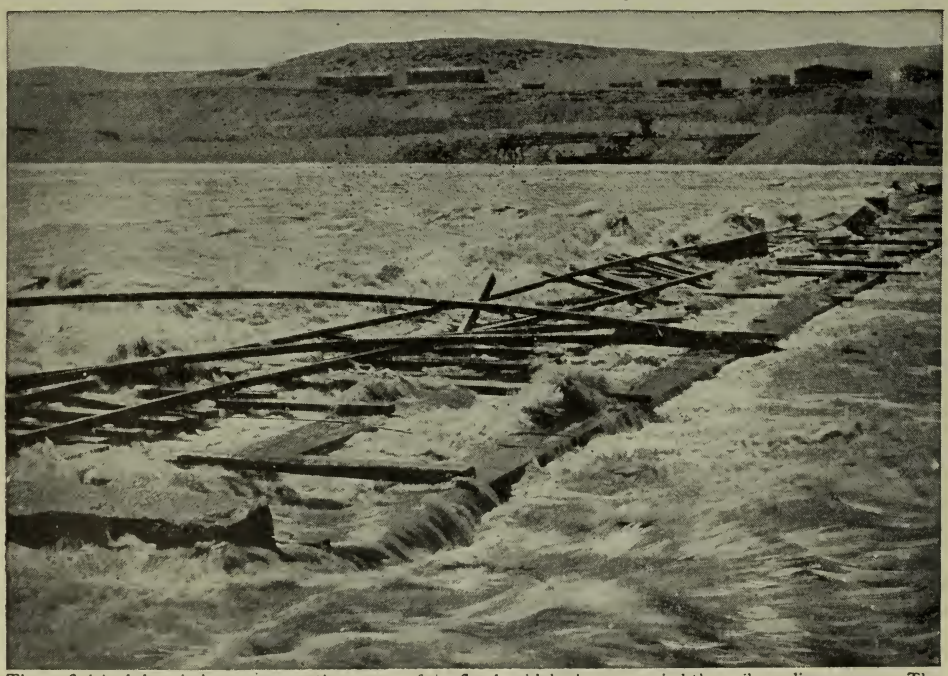
THE GATES THAT SET FREE A WORLD OF WATER

The sluices in the dam are lined with cast iron, and here we see them being built. When all the sluices are open, the total width available for the passage of water is 427 yards, which is a little less than a quarter of a mile, and the water passing at any moment is equal to twice the flow over Niagara Falls.

Once a year the melting of the snow in the Abyssinian highlands makes the Nile a rushing torrent, and by the time the river began to be in flood in 1900 the great dam was built as high as the top of the iron linings of the sluices. Then the up-stream temporary barrier was broken slightly, as shown in this picture, and the rush of the water soon swept away the whole of this barrier, which was no longer needed. The shock of water pouring through the sluices destroyed the loose rocky bed of the river, and a granite "apron," or floor, was laid for some distance from the dam.

THE LAST WILD RUSH OF THE UNTAMED RIVER

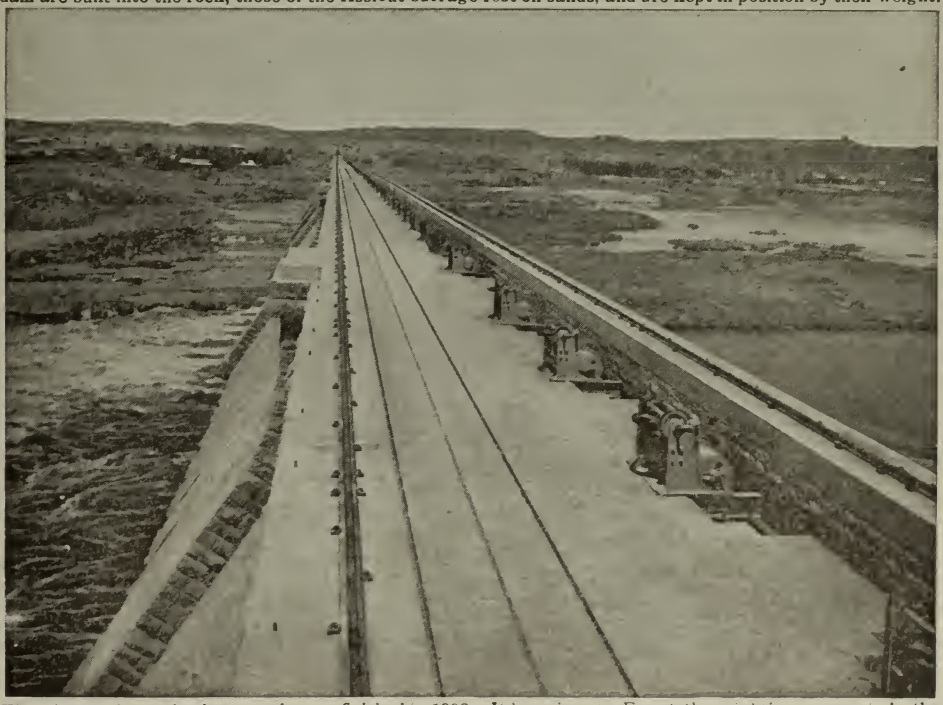
Here we see the river rushing through the sluices after the up-stream barrier had been burst. As can be seen in the picture below, the water rose until it swept over the top of the dam, but work was continued until the water had almost reached the top. Tools and cranes were then removed to shore, and for the last time the untamed river rushed on its mad course to the sea. By the following year the waters had been harnessed.



The unfinished dam is here seen at the mercy of the flood, which almost carried the railway lines away. The original idea for the dam was that it should be built high enough to keep in store 2,500 million tons of water, but this would have meant the flooding of the ancient temple of Philæ for a part of the year. To save this beautiful temple, therefore, the dam was made lower, and the store of water reduced to a thousand million tons. This, however, has been proved to be insufficient, and now the dam is being raised to store the larger quantity.

THE MIGHTIEST RESERVOIR IN THE WORLD

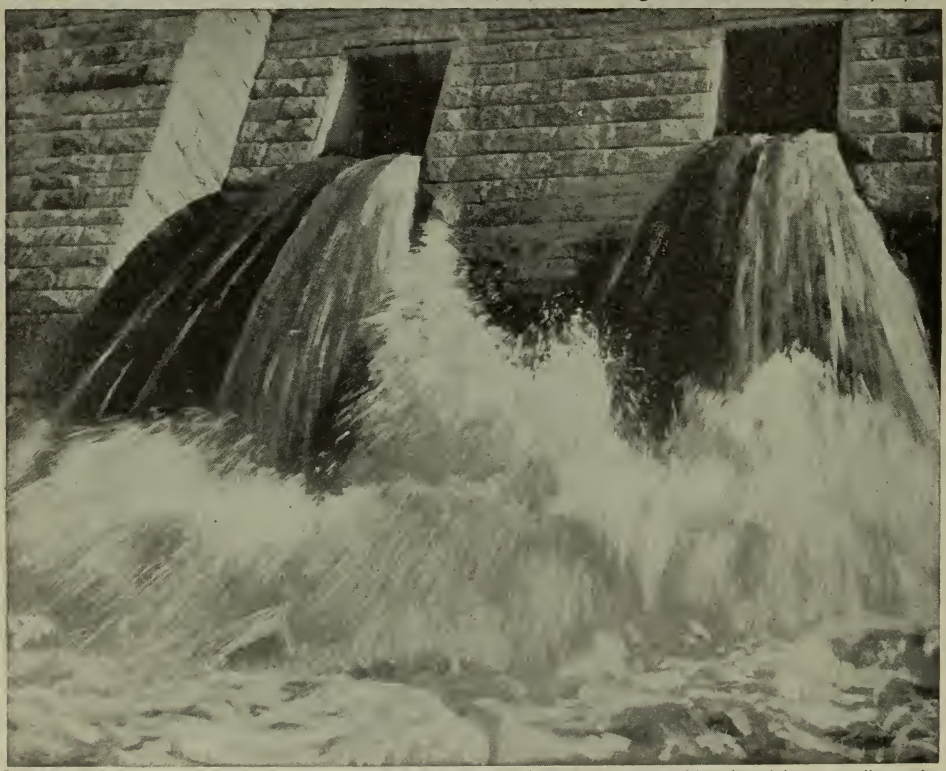
When the flood had subsided, work was resumed, and here we see it being completed. The Assouan dam, with the Assiout and other barrages—as the dams are also called—lower down the Nile, all forming part of the great irrigation scheme, is considered the greatest engineering feat in history. While the foundations of the Assouan dam are built into the rock, those of the Assiout barrage rest on sands, and are kept in position by their weight.



This picture shows the Assouan dam as finished in 1902. It has given to Egypt the mightiest reservoir in the world. The machinery along the top of the dam is for opening and closing the gates. When the Khedive opened the first five of these gates and let the water through, he used a key made in the shape of an ancient Egyptian amulet that was the symbol of life, because the wonderful dam that had been built meant life for Egypt.

LETTING LOOSE A MILLION TONS OF WATER

This is the south wall of the great dam that now stores up as much water as would supply the whole of the United Kingdom for a year. When the present extensions are completed, it will store up more than twice as much. Already, by means of this dam and the barrages lower down the Nile, over 400,000 acres have been watered, and have increased in value to the enormous extent of $140,000,000. The irrigation works cost about $30,000,000.



The great sluice gates, holding back a thousand million tons of water, are opened by electricity as easily as the turning on of a light, and the torrent of water sweeping through the openings presents a magnificent and imposing sight. More than a million tons of water rush through in twelve hours, and it is true that this wonderful torrent, controlled and regulated as it is, makes the wilderness blossom as the rose. A deep channel through the dam, for shipping, with four huge locks, keeps the river open for the navigation of the largest river steamers.

The next Familiar Things are on page 5471

THE RABBIT AT HOME

HOMES NOT MADE WITH HANDS

STRANGE DWELLING-PLACES OF ANIMALS

Supposing that all living creatures were gifted with the power of speech, what song might we expect them to sing ? If we can fancy such an impossible thing happening at all, may we not imagine that they would sing, as their favourite song, that song which is the favourite of every son and daughter of our own country, "Home Sweet Home" ? To many species of animals, their homes are very dear, and they will endure the greatest hardships to defend them.

We all know how domesticated animals love their homes. The horse, the dog, and the cat would sing the song with all their might. A horse never forgets the place which has once been its home. One intelligent pony, revisiting a town to which it had not been for eight years, made a dash for its old stable the moment it saw the house at which its master had formerly lived.

A dog will travel hundreds of miles on foot to return to the spot to which the kindness of human beings has accustomed it. A cat so dearly loves its home that it will even remain behind in an empty house when the family goes. And think what wonders of flight the homing pigeon performs in order to return to the loft in which some kind boy or girl has made its home. What, however, of the animals that we have not tamed ? They have just as warm an affection for their homes, the dwellings which they have made for themselves and for their little ones. There is a good old English expression, "house-proud." A woman who is fond of her home, and likes to see it pretty and comfortable for everybody in it, is house-proud. Well, many of the animals are house-proud, too, and devote great labour and skill to the making of the places in which they live and rear their babies.

Seeing that the apes and monkeys rank next in the scale of life to man, we might expect them to show skill next to man's in the making of their homes. But they do not. The larger apes are content with a simple lodging in the trees of the great forest in which they live; and none of the monkeys ever makes any pretence at building a dwelling for itself. Are we to be disappointed at this ? Not at all. As we all know, man himself, before he became civilised, was content with the rudest dwelling. A rough cave served, until wolves or hyenas came to quarrel over his bones. Man of the very early ages, though he was far superior in intellect to the highest of the animals, never had any home half so snug as that of the mole or beaver. Therefore, let us not think slightingly of the apes and

CONTINUED FROM PAGE 5330

the monkeys because they do not build elaborate dwellings for themselves.

The fact is that for the wonders of

THE INSIDE OF A MOLE-HILL

Nature's architects we have to go to the smaller birds and animals, and to the insects. These are the little workers which make us realise how very humbly we ought to view the works of men. Men with their wonderful brains have invented tools for every sort of work, but for all the wonders performed in the animal world there is not a single tool. We need not step beyond our own garden to see the ants at work; we have only to walk to the nearest meadow to find signs of the labour of the mole, even if the busy and impudent little gentleman does not actually venture upon our private property. Quite a little city under the ground is burrowed by the mole. The mole-hills with which we are all familiar are not part of the dwelling at all, so we need not dig down expecting to find Mr.

YOUNG MOLES IN THEIR NESTS

and Mrs. Mole and family at the bottom of one. The mole-hills are merely shafts which the mole has thrown up in order to get rid of the loose soil which he has scraped away in making one of his tunnels. The actual home is not so easily found. It is hidden, as a rule, under a tree or large shrub, or in the bank of a field. If we can get a peep inside that, then the mystery of the mole's dwelling is at once made plain.

The main hall of the dwelling is a lofty, sphere-shaped apartment. Around the hall run two galleries, one level with the ceiling, the other higher still. The only way into the great hall is from the upper gallery, from which three passages lead through the ceiling; but there are five short passages connecting the upper gallery with the lower. Tunnels run in all directions from the home of the mole, but each one comes out into the lower gallery surrounding the hall, so that the mole, on arriving, must enter the lower gallery, run upstairs, as it were,

YOUNG FOXES PEEPING OUT OF THEIR HOME

to the upper gallery, then pop through one of the passages leading into the hall.

This, however, is not the only part of the dwelling of the mole; there is a little house for the children. This is a rather large chamber, made where two of the underground main roads or tunnels cross. We can see the reason for this; it affords the parent and her little ones ample chance of escape should danger threaten. The explanation of all the other passages round about the main hall is not so clear. We all understand that the height of the hall is to give proper ventilation for even under the ground, the mole must have air. For the rest, it is not easy to see why such elaborate defences should be required. Ferrets and weasels are not likely to go along a mole's run, and there can be no other underground enemies, unless it be other moles. That idea suggests an explanation. Moles, when

they are in love, are so terribly savage —male against male, of course—that, unless some such scheme of defence as we have been studying were made to keep out rivals, father and mother moles would never be able to bring up their families in peace. For, like male shrews, the moles fight until one is killed; and very often the victor is so badly injured in the battle that he, too, must die.

The shrew, tiny fellow that he is, is a great burrower, but not to be compared with the mole. The shrew's abode is a simple nest placed at the end of a straight, long tunnel constructed just below the surface. This can be reached easily by any other shrew, but woe betide the intruder; he will certainly be killed if he be a shrew, unless he kill the shrew already in possession. There are connecting links between the shrews and the moles, and we find characteristics common to

THREE VERY YOUNG HARES IN THEIR NEST

several different species of these animals.

There is a burrowing shrew in India, whose habits closely resemble those of our common moles. There is the desman, which is abundant in the wilds of the Russian Empire, and which once lived in England—an animal whose habits resemble those of our pretty little water shrews. But whereas our furry little creature is content with a mere hole in the bank for his home, the desman makes himself a noble hall at the end of the burrow which leads from his stream. He passes the greater part of his time in the water, but when he comes out to take a nap in his home, his fur is as dry as the feathers of a duck. The fur of these swimming animals never really gets wet; air collects about each separate hair, and the animal swims in what is practically an envelope of air.

Of course, the king of workmen among the animals whose life is divided between the water and the land is the beaver. He must have water in which to swim; he must have a snug, dry home for the

A HEDGEHOG FAMILY AT HOME

night. He comes to a stream which, while of sufficient depth at the time, may in dry weather become too low. So he sets to work, and with his powerful teeth gnaws at the trunks of trees until the latter fall, then cuts them up into logs; and with these, and with mud and stones and twigs and all manner of vegetation, builds a sort of wall or dam, as we call it, across the stream. This causes the water to collect at this spot until there is a sufficient depth to flow over the top of the dam. There will always be water there, unless the stream above the dam actually runs dry. The beaver may now make his home, satisfied that there will be at his door the constant stream which he needs. The house which the beaver builds is a masterpiece of skill. It is built of mud, into which are forced branches

A NEST OF YOUNG SHREW MICE

of trees, and the whole is beaten so solid that, when the frosts of winter come, the lodge, as it is called, is as hard as iron.

The dwelling is about six feet in diameter, and three feet high. Inside, all is snug and warm, the beds being arranged round the walls, so that father and mother beaver and the family can all be accommodated until the time comes for the little ones to go out into the world to make homes for themselves. Two passages lead from the lodge into the water. One of these is fairly high up, but opens out below the level of the water. The other opens out at a lower point, so that, should the water be frozen at the surface, the beaver can get out by the lower one to reach the store of bark which it has hidden to be its food supply in winter.

The labours of the beaver are really of an almost unbelievable character, so extensive, so thorough, and so wonderful in design and execution are they; but we must not exhaust our admiration here, for there is another little creature, the web-footed mole, who, though he is web-footed, is not a swimmer, but a landsman all his days, and a miner above all else. This mole makes a home underground which some of the friends of "Alice in Wonderland" might envy. The marvel of it is, however, the pace at which this creature works. A reliable observer tells us that he has seen a passage nearly a hundred yards in length made by one of these moles in a single night when the soil has been rendered soft by rain. Now, what does that amount of work mean to a mole? It means this: that if a man were to perform a task equal in proportion to his size he would have to bore in one night a tunnel, big enough to admit his body, thirty-seven miles long! Let us remember that, when we think that as human beings we do wonderful works.

With the beaver in mind, we might expect the otter, a king of the water and a fairly nimble animal on land, to be clever enough to make himself a nice hole in the banks of the rivers which he frequents. But he is like the early men—content with ready-made refuges, and these are in or near the river-bank. These he may scrape and shape according to his liking, but it is not known that the otter ever sets out and makes a home for himself where there is not some natural retreat already in existence.

The weasels are specially shaped for making their way in narrow, twisting passages underground, but they do not trouble to make homes of this character; they seek shelter above ground. The weasels must be content to share the reflected glory springing from the feats of the big man of their family, the badger. He is a miner of rare ability, scooping out long, winding passages leading to his underground hall, his nursery, and other apartments, which are fashioned upon the most approved plan with regard to ventilation. This is secured by his making seven or eight passages, opening thirty paces apart. Each of these passages leaves open a way of escape in case of attack upon the fortress, but each also carries sweet air to the home.

Men who know the fox only as an animal which they hunt would scarcely think of looking for their prey in the hole of a badger, but Master Reynard is sometimes found there. It is not because the fox cannot dig a home for himself that he has to seek the shelter of the badger's home. He is cunning enough to turn the badger out of his home, and make the place his own. He enters the badger's house, and the big weasel, knowing that he has nothing to fear, permits the intrusion. But while the badger is a very cleanly animal, the fox is not; at any rate, he is not when he takes up his home under the roof of his friend, the badger. So the badger, unable to tolerate the vexatious presence of the uncleanly fox, goes off and makes a new home, leaving the fox in possession.

The badger's is not the only home which the fox takes, as the poor rabbit knows to his cost. The European wild rabbit is a splendid excavator. He sinks a steep, sloping shaft into the ground, then, having gone some distance down and forward, burrows in an upward direction, and at the top of this rising shaft makes a big chamber for himself, wife, and family. Sometimes a fox, following a rabbit home, digs his way into the burrow, eats up the poor little rabbit, then, finding the burrow warm and nice, settles there himself.

The simple shaft of the rabbit which we have been thinking of is not all that this animal makes. A few weeks before this story was written, the writer stood in a low-lying field looking up at a bank above which runs a quiet little highway. This bank is simply honeycombed by rabbits, who have made their runs right through the bank, under the whole of the roadway, and into the fields on the other side of the road. But we do not see the

THE LITTLE DOGS THAT BUILD A TOWN

The pretty little prairie marmot is often called the prairie dog because of its yelping, that sounds like the bark of a dog. It is found in large colonies, and it burrows tunnels in the ground. Thousands of these homes, which are deep down, are burrowed close together, so that the ground is rendered unsafe for horses. Over the burrows are mounds of earth, and the ground above a prairie-marmot colony resembles a miniature town of huts.

entrances to their homes. No. Running right along the foot of the bank, they have excavated a tunnel, pierced by scores of little openings. Behind this screen are the openings to the rabbits' castles in the soil. At any alarm, the rabbits bolt to the tunnel, enter by one of the little doorways, then turn to right or left, and gain their homes without the whereabouts of their retreat being discovered.

The fox we have been discussing is the English red fox, but we Americans have a grey fox, which makes a snug home in the stump of an old tree. The Arctic fox is more industrious, as it needs to be, in the fearful cold of the winter which it has to endure. To make the best of matters, Arctic foxes collect in colonies of from thirty to forty, and dig deep burrows in the earth, all the burrows being close together, and in these they defy the cold. But each fox has his separate suite of apartments, so to speak. He digs a main tunnel, with a set of rooms and a number of passages at the bottom, and no fox penetrates the estate of his neighbour.

Smaller animals work quite as hard as the Arctic fox. The marmot is a little giant of industry, and makes two homes every year. He goes up the Alps in the summer, and there makes his summer dwelling, which serves for nightly shelter and also for a refuge in time of bad weather. When the early snows of winter come, down the mountains troop the marmots, bringing their little ones with them. When they reach the quarters in which they are to pass the winter, they work in parties of from fifteen to twenty, digging a long tunnel in the earth, and at the end of that a lofty, circular room. They carry in a large quantity of grass for bedding, blocking the entrance to the home, then go snugly off to sleep for the winter. Other species of marmots are content with one residence for winter and summer, but they are none the less busy little builders.

THE STRANGE LITTLE DUCKBILL PLATYPUS IN ITS UNDERGROUND HOME

The biggest marmot colonies are those in which the prairie marmots, or prairie dogs, as they are sometimes called, reside. Their cleverly-made homes are so numerous that they often cover as much as 200 acres of ground. They make excellent tunnels and chambers, and the earth that they excavate remains at the entrance; or, rather, we should say that a dozen entrances to as many burrows are grouped round these mounds, upon which sentinels watching for an enemy take their stand, and sound a sharp

"tweet, tweet!" at the first sign of alarm, sending the whole colony racing down their tunnels.

In our own woods we may find a splendid little builder in our own pretty squirrel. He does not go underground, but makes a nest which a bird might envy, either in a hollow of some tree-trunk, or in a fork of the branches, high up out of danger's way. First he makes a strong flooring and sides, and roofs these over with a little dome, all being of twigs, so closely woven that the rain and wind, which he hates, cannot enter. The inside he lines with the softest moss, and the little home is as snug as one could imagine. But he must have air, so he leaves open a little doorway, by which he enters from below, and has another opening on the opposite side by which he can escape should an enemy seek to attack his house. If rain or wind assails the house, all that he has to do is to plug up the two openings with moss, and there he is, as neatly housed as any little brownie in the story-books.

Two more burrowers we must notice, the echidna and the duckbill, or duck-billed platypus. These are the animals which lay eggs, and belong to the strange families of Australasia, where the animals are so different from the animals of the rest of the world. The echidna, which is an ant-eater, makes his home underground without difficulty, thanks to the enormous power which he possesses in his long and sharp claws. The duckbill, however, though his home is on land, gets his living in the water. Long experience of the natives has taught him to be very cautious, and he selects for his home a quiet stream opening out into reedy, solitary pools, in which he can find his food of vegetable matter, shellfish, worms, and so forth.

In order that he may gain the water without attracting attention, the duckbill enters from a tunnel which runs down from his home below the surface of the pool. This tunnel winds up through the soil for as much as fifty feet, and leads to a big, well-shaped chamber, which is lined with grass and is cosy and secure. In order to let in air to the dwelling, the duckbill drives a second tunnel from the sleeping apartment to the surface of the soil, making the opening in the midst of thick vegetation where it cannot be discovered, except by the marvellous eyes of the Australian native. The duckbill has in this second tunnel a way of escape, should he be attacked from the first tunnel; but he will always take to the water if he can, for with his webbed feet he makes but poor progress on land.

We have only just glanced at a few of the clever home-builders of the animal world, but even a glance convinces us that in their way these little builders are not to be surpassed among men.

THE NEST OF A CALIFORNIAN HUMMING BIRD

Humming birds' nests are always hard to find, as they are very small, and covered with material similar to the twigs on which they rest. This nest has been tilted to show the eggs. In the east, the ruby-throated humming-bird generally puts her lichen-covered little cup on an apple-bough. One can sometimes find it by following the birds as they fly back to it. The beautiful, fairylike nests of humming birds can be seen in most museums.

THE NEXT STORY OF NATURE IS ON PAGE 5437

THE TRAIN WHICH GOES TO SEA

If you look at your map of Florida you will see that to the South are a number of small islands, like stepping-stones, called keys. A railroad has been completed from the mainland across these islands down to Key West, only ninety miles from Havana, Cuba. Between the islands the track is supported by concrete arches as you see in the picture, so that for a considerable part of the way the train is over the open sea. It will be possible to run freight cars on steamers at Key West and they can be landed in Havana in about six hours. Passengers will be transferred to swifter boats. This arrangement brings Cuba very close to the United States.

CONTINUED FROM PAGE 5350.

THE LITTLE SPINNER AT THE WINDOW

WHY THE FINE SHAWLS COME FROM SHETLAND

LONG ago, far away in the Shetland Islands, there once lived a little lame girl called Grete. Her home was built on the shore of a voe, or sea lake, that ran quite a distance inland. It was built of rough stones, and had only one window.

The roof was covered with green sods, with big white daisies and other flowers growing on it; wreathed, too, with ropes of seaweed, wound round stones, to prevent the sods from being blown off in high winds. There was no garden, but the ground was covered with fine white sand, full of little pink and white and yellow shells, for the green waves curled at its edge only a little way off.

There was a fire of peat in the middle of its only room, and as there was no chimney the smoke had to find its own way out, so the walls looked black and dismal. Then, a calf or some lambs, or even some little pigs, often shared the fireside in cold weather, and there was scarcely any furniture, for Grete and her mother were very, very poor. But they had a spinning-wheel and spun the sheep's wool into yarn, and knitted thick stockings and clothes for the fishermen.

On a sunny summer day the little island looked like fairyland, with other fairy islands shining in the distance, but Grete, who would sit at the window with her spinning-wheel and look out upon the island, knew it in winter storms as well, and was afraid then of the great sea which had caused her father's death, and her own lameness. For poor little Grete could not run about and join in games. Often, for days, she had to lie on her back, bearing a cruel pain that sometimes brought tears to her eyes.

One day when the sea roared, and the spray struck against the small window, dimming it so that it was impossible to see out of it, Grete, whose leg ached badly, was lying on the bed by the window.

For once the girl's busy fingers were idle, as she watched a big spider who was beginning to spin his web in the corner of the window. When she first noticed him he was running a line from one corner to the other, then he went back to the middle, and made a line fast to another corner, and after making a sort of wheel with a lot of spokes all joining in the middle, he started to work rounds. How clever he was! And he went round so fast that he made her feel quite giddy.

The spider somehow seemed to grow bigger and bigger, and his web covered more and more of the window, and was getting as white as snow. Slowly he seemed to change, until he was no longer a spider, but a trow, a queer little man with a face like a rosy, dried-up apple. And the trow nodded his head at her, and said in a tiny voice:

"Watch me, Grete, and you will know how to knit."

Yes, when she looked harder it was wool he was spinning, white and soft and fine; and the web—no, the knitting, of course, grew apace under his quick fingers. Why, it seemed quite easy to see how such beautiful patterns could be made. She was learning how to do

it fast, and the little trow turned every now and then, and smiled and nodded. The door opened. So did Grete's eyes. And now there was only a real spider, with an everyday sort of web, and, it was very odd, he was no longer at work, but was all tucked up into a ball against the ledge because he was too disgusted at the glittering little beads of spray that had forced a way through, and were hanging on his web, to go on with making it.

"Eh, mother," she cried, "you have frightened away the trow just as I was getting on so grandly with learning the fine knitting."

"What has the wee wifie been dreaming about?" said her mother. "Oh, I am tired! It has been a weary day's work." And she sat down, not noticing in her bewilderment, that Grete did not answer. The little girl could not explain just then, and felt she wanted to think it all over before she forgot the wonderful pattern she had learned so strangely.

She dreamed about it all night, and could scarcely eat any breakfast next morning—she was so excited; and her mother helped her to pick out all the whitest wool from the bundles, so that she might start carding and spinning it at once. It would not spin fine enough to please her the first day; no, nor the second day, but she persevered until she was satisfied; and as her wheel went whirring round, she fancied she heard the trow's voice saying: "Try again, Grete. Try again." She thought he was helping her all the time, for surely never had wool been spun of such fineness and evenness before. Then, too, the spider's web was there; and she had only to look at the window, and the pattern seemed to stand out clearly again.

Before long, the neighbours all came crowding in to see the wonderful shawl that looked like lace. The fame of it even reached the ears of a great lady in Lerwick, who sent a messenger in a boat to say she wished him to bring it for her to see. Grete was sorry to part with her treasure, but her mother said it was a great honour for them, so it was borne away out of her sight across the sea to Lerwick.

Then, one fine day, Grete saw a white sail making for the voe. Soon a lady was sitting beside her, and asking her about her work so kindly that she quite forgot to be frightened. And when the lady left she gave Grete a gold piece for the shawl, the first gold piece that had ever been seen on the island. Everybody wanted to learn how to get gold pieces, and Grete was delighted to teach them. So better days came, not only for Grete and her mother, not only for their own little island, but for all the islands near.

This is how the Shetlanders became so famous for their filmy lace-like shawls, and how it is that they do them without rules or patterns or counting of stitches, in a way that cannot be imitated by people who live in other parts of the world, for no trow ever came to teach them, as Grete's friend taught her long ago.

A SHETLAND WOMAN KNITTING A SHAWL BY THE WAYSIDE
This picture is from a photograph by Charles Reid, Wishaw

STORIES TOLD IN INDIA 3,000 YEARS AGO

These little stories were told to the boys and girls of India a thousand years before Jesus Christ was born, but they are still as interesting as when they were originally told to the children of long ago. They were first told in Sanskrit, the sacred language of the people of India.

THE TIGER AND THE TRAVELLER

A TIGER who was too old to go hunting for his food lay hidden in the jungle, crying to the passers-by to come and receive a handsome bangle for nothing. A covetous fellow, hearing the invitation, asked to see the bangle, and the tiger pushed one of his paws a little way through the grass and showed the stripe upon it. Thereupon the covetous man started to get it, but soon found himself up to his waist in a pool of mud.

"One moment," said the tiger, "and I will come and help you out."

And, going into the pool, he seized the man and made a hearty meal of him.

Covetousness often leads a man into trouble and disaster.

THE APE AND THE WEDGE

IN Behar, a great temple was being built, and a carpenter who had partly sawn through a huge beam of wood went away to dinner, leaving a wedge in the beam to prevent the two sawn parts from springing together. While the man was away, a party of monkeys came along, and one of these, thinking to appear clever before his companions, said:

"See me take the wedge out of this beam and give the carpenter more work to do!"

Then he jumped down into the opening in the beam, and tugged away at the wedge, until at last it came out, and at the same moment the sections of the beam sprang together and held the monkey fast until the carpenter returned.

Those who make trouble for others often fall into it themselves.

THE BRAHMAN AND THE GOAT

A BRAHMAN who lived in the forest had been to the town to buy a goat for sacrifice, and was returning with it on his shoulders, when he was seen by three rogues, who determined to obtain his goat.

They ran ahead of him and seated themselves at the foot of three different trees.

"Why do you carry that dog, master?" said the first, with well-feigned surprise. The dog, it must be understood, is regarded as an unclean animal by the Brahmans.

"Dog!" was the indignant reply. "It is no dog at all, but a goat."

The Brahman came to the second rogue, who made the same remark. This time the Brahman took the goat from his shoulder, looked well at it, and, replacing it, proceeded on his journey.

But when still a third man said the goat was a dog, the Brahman doubted the evidence of his own eyes, threw down the animal, washed himself from the pollution of the supposed dog, and hurried off home. The three rogues then seized their prey, and cooked and ate it.

Be on your guard against rogues.

THE BRAHMAN AND THE POTS

A BRAHMAN went to rest in a potter's workshop, taking with him his staff, and a little dish containing some meal that had been given to him. As he lay upon the ground he began to meditate.

"If I sell this meal," he said, "I can buy some of these pots with the proceeds. Then I can sell those and make a profit, and with the money I can buy clothes to sell. And so, in time, I shall be worth many thousands of rupees. Then I shall buy a house and marry, and if my wives quarrel I shall take up my stick—like this, and punish them—thus."

As he thought these things he waved his staff, smashed his own dish, upset the meal in the dirt and dust, and broke many of the potter's vessels. So ended his wonderful castles built in the air.

Do not begin to count your chickens before they are hatched.

THE LION AND THE CAT

AWAY in the mountains of the north of India lived a lion, who was much annoyed by a small mouse that crept out while he was asleep and gnawed his mane. At last the lion went to the village and obtained a cat, promising to treat it royally if it would keep the mouse away.

This the cat did for a time, and the lion always gave his protector the best of food. But one day, when the mouse was very hungry, it came out and was killed by the cat. The lion soon found that there was no longer any mouse to annoy him, and he at once ceased supplying the cat with food, and the cat had to return to the village and live as poorly as it had done before.

The great are often selfish in their patronage of those who help them.

THE TALE OF JENNY MARTIN

JENNY MARTIN was the daughter of a poor woodcutter in the New Forest. One midsummer eve she was wandering about the forest, gathering flowers, when she saw a little white mouse sleeping on some moss beneath a great oak-tree.

"Oh, what a pretty white mouse!" said Jenny. "I will take it home."

She took the mouse in her hands, and it woke up and said:

"No, Jenny, do not take me to your father's cottage, or the cat may get at me and kill me. Leave me here. I am the Queen of the Mice, and I will reward you for your kindness."

"What will you give me, then?" said Jenny.

"Anything that you like to ask for," said the little white mouse. "You have only to come to this tree and tap three times, and I will grant you what you wish."

"Well, to begin with," said Jenny, "I should like my father's cottage to be changed into a pretty farmhouse."

"That I have done," said the mouse, "as you will see when you return home."

Jenny put the little white mouse back on the moss beneath the oak-tree, and ran home. In the place of the small, shabby cottage which she had left a few hours before, there stood a pretty farmhouse with an orchard full of large fruit-trees, a stable with three horses, and a cow-shed with thirty cows; and there were plenty of ducks and geese and chickens in the yard. Oh, how happy Jenny was, and how amazed was her father, the poor woodcutter, when he saw what had occurred!

A manly young farmer who had always been in love with Jenny came that evening to ask her to marry him. But Jenny was now proud and disdainful, and she dismissed her old sweetheart. She began to feel sorry that she had not asked the Queen of the Mice for something more than a farmhouse. So she went to the tree, tapped three times, and said:

"Little white mouse! Little white mouse!
Jenny is tapping outside your house."

The little mouse peeped out and said:

"Well, what do you want now, Jenny?"

"The farm is too small and dirty," said the girl. "I should like a fine, handsomely furnished manor-house with a crowd of servants, a coffer full of gold, and a heap of rich, beautiful dresses."

"Return home," said the mouse, "and there you will find all that you desire."

Jenny thus became a rich young lady, and as she was pretty, as well as rich, the squire's son came to woo her, and all the neighbours looked forward to their marriage. But no marriage took place, for Jenny grew proud and disdainful.

"No squire's son for me!" she said. "I will get a castle and marry a lord."

So she went to the oak-tree and tapped three times, and said:

"Little white mouse! Little white mouse!
Jenny is tapping outside your house."

"Dear me! Dear me! Whatever do you want now?"

"I want to be a lady," said Jenny, "and live in a great castle."

"Very well," said the little white mouse. "Go home, and you will find all that you desire."

So Jenny became a great lady, and a duke came and made a proposal of marriage to her. But Jenny was still proud and disdainful.

"A duchess?" she said. "I do not care to be a mere duchess; I must be a queen."

When she asked the little white mouse to change her castle into a royal palace, and make her a queen, the little white mouse said:

"Take care, Jenny, take care! You are getting very proud and disdainful. But go home, and, for the last time, you will there find all that you desire."

That very day the young and handsome King of England came to the New Forest to hunt.

As he was chasing the deer, he saw a magnificent palace gleaming between the trees. He rode up to look at it just as Jenny returned from her visit to the little white mouse. The woodcutter's daughter was now clad in rich, trailing robes of marvellous colours. She no longer appeared merely a pretty girl, but a very stately and beautiful lady. The king fell in love with her at first sight, and asked her to be his queen.

Jenny was at last pleased and contented with her wonderful good fortune. As she watched the preparation which was being made for her marriage with the king, she thought there was nothing left on earth for her to desire. Every day her royal lover came to her palace with splendid gifts; she had great ladies to wait upon her, and great lords to attend

to her orders, and triumphal arches connected by festoons of foliage and flowers were erected all along the road from the New Forest to the City of Westminster, where the wedding was to take place. But as Jenny was about to enter into the gorgeous state carriage that was drawn up before her palace, she said to the king :

" I have forgotten something. Wait a few minutes while I take a walk in the forest."

The vast crowd of courtiers and knights and men-at-arms made way for her, and, pulling up her long robe, she ran to the

THE KING FELL IN LOVE WITH JENNY AT FIRST SIGHT, AND ASKED HER TO BE HIS QUEEN

oak-tree, and tapped impatiently three times, and said in a commanding voice :

" Little white mouse ! Little white mouse ! The Queen of England has come to your house."

" Well, Jenny Martin," said the little white mouse in a severe tone, " are you still not satisfied with all the wonderful things that I've done for you ? "

" I want only one thing more," said Jenny. " When I am married I want my husband to give way to me in everything. Then I shall be ruler of England."

" You have no husband yet," said the little white mouse, in great anger, " and you will have to become a sweeter and more dutiful girl before you get one. Go home, and profit by the lesson that is awaiting you there."

Jenny went back through the forest in a state of strange fear, for, as she looked at her dress, she saw that it had changed from a queenly raiment into the poor, plain attire of a peasant girl. The palace had disappeared, and the king and the multitude of lords and great ladies and glittering soldiers were gone. Only her father's humble cottage now stood beneath the trees, and, strange to say, when the woodcutter came home late that evening to supper, he spoke as though nothing marvellous had ever occurred.

" Was it only a dream ? " Jenny kept saying to herself when she found that none of the neighbours laughed at her.

No doubt the kindly little mouse made it all appear to be only a dream in order to lighten the punishment which Jenny had to bear. But Jenny learned the lesson. She became a sweet, contented, industrious girl, and the manly young farmer who had always loved her came and married her, and she lived more happily with him on that quiet little farm than she would ever have done on a high and glittering throne in a palace surrounded by courtiers.

THE PEASANT AND THE THREE ROBBERS

A PEASANT was one day travelling to market upon his donkey, taking with him a goat that followed behind, and was attached by a rope to the saddle of the ass. As the man went along the road, three cunning robbers saw him.

"Here comes a fine fish for our net," said one. "I am going to take his goat without the simple fellow knowing it."

"And I," said another of the thieves, "will do something cleverer than that. I will take his donkey with his permission, and he shall thank me sincerely for doing so."

"Ah!" said the third robber. "I will beat you both, for I will have the very coat off his back; and while he takes it off to give to me, he shall call me his friend and benefactor."

"Come along," said all three at once. The first robber went up quietly behind the unsuspecting peasant, removed a bell that was tied to the goat's neck, and fastened it to the donkey's tail, so that it might continue to tinkle and the poor man might think his goat was still following. The thief then loosed the rope from the goat's neck and made off with the animal. After a time the peasant happened to look round, and was amazed to find that, though the bell still tinkled, the goat had disappeared. He ran hither and thither, but could see no trace of his goat. Just then the second robber approached, and, on being questioned, replied:

THE FIRST ROBBER TIED THE BELL TO THE TAIL

"I saw a man running in that direction with a goat, and I'll be bound to say it was yours. I will mind your donkey, if you like, while you give chase."

The peasant thanked the thief profusely and ran off, leaving his donkey with the rascal, who soon rode away upon its back.

The poor countryman, of course, found no trace of his goat, and soon returned, only to discover that his ass had disappeared too. He was very angry with the men who had robbed him, and not less angry with himself for being duped.

"Well," said he, "the next man who tries to impose upon me will have to be very clever. I am on my guard now."

At this moment he heard a series of dismal groans, and, going to the spot whence they proceeded, he found a man weeping bitterly and sitting upon the ground near a well, in the greatest distress. It was the third robber.

"Why are you making this noise?" said the peasant. "Do you think you are the only man in trouble? I am on my way to market, and have just been robbed of both goat and donkey."

"Pooh!" replied the other. "That is nothing. I was carrying a casket of the richest jewels, and was resting by this well, when by accident I let the treasure fall in, and there it lies at the bottom, quite out of reach."

The peasant looked into the well, but it was too dark to see anything at all.

"Why do you not dive in and recover your treasure?" said he.

"Alas!" replied the robber, groaning, "I cannot swim or dive; but if only I could find someone who would dive in for me and get the casket, I would reward him with half its contents."

"Would you, indeed?" said the peasant. "Then I will dive in and get it for you."

The groaning man appeared delighted.

"You shall certainly have half of the jewels," he said, whereupon the peasant thanked him as the benefactor who would more than replace the loss of the goat and the ass.

Taking off his coat, the peasant dived in, but, of course, there was no treasure in the well; and when, after hunting for a long time in the water, he came out greatly disappointed, to say that he was quite unable to find the treasure, he found that the third robber had made off with his coat.

THE NEXT STORIES ARE ON PAGE 5518

THE PICTURESQUE ST. LAWRENCE

The St. Lawrence River begins at the foot of Lake Ontario opposite the city of Kingston and flows in a northeasterly direction about seven hundred and fifty miles when its crystal waters merge with those of the gulf of the same name. With its tributaries, it drains over four hundred thousand square miles of country made up of fertile valleys and plains inhabited by a prosperous people, as well as desolate barrens and deep forests untrodden as yet by the foot of man.

Seldom less than two miles in width, it is two and one-half miles wide where it issues from Lake Ontario and with several expansions which are called lakes it becomes eighty miles in width where it ceases to be considered a river. The influence of the tide is felt over five hundred miles from the gulf, while it is navigable for sea-going vessels to Montreal, eighty miles farther inland. Rapids prevent navigation above this point, but by means of canals, boats pass from Montreal to Lake Superior.

If inferior in breadth to the mighty Amazon, if lacking the length of the Mississippi, if missing the ancient castles of the Rhine, if wanting the lonely grandeur that overhangs the Congo, the majestic St. Lawrence has features as remarkable as any of these. It has its source in the largest body of fresh water upon the globe, and among all of the large rivers of the world, it is the only one whose volume is not sensibly affected by the elements. In rain or in sunshine, in spring floods or in summer droughts, the river seldom varies more than a foot in its rise and fall.

KINGSTON

Kingston, with its Military College, its massive gray stone forts, its martello towers, is the West Point of Canada. The city is beautifully situated at the foot of Lake Ontario and at the head of the River St. Lawrence. It is called the Limestone City on account of the general use of this stone in both public and private buildings.

THE THOUSAND ISLANDS

Where the great Laurentian chain of mountains, running from east to west across Canada, swings southward to enter New York, it drops a link as it were and allows the last of the big lakes an outlet into the channel of the St. Lawrence, which moves sluggishly among the numerous islands, helping to form the most picturesque archipelago in the world. The actual number of islands in this Lake of the Thousand Isles is near two thousand, varying in size, shape and appearance from a small barren rock projecting from the surface of the river, to larger ones ornamented by summer residences varying in style of architecture from the modest cottage of the camper to the magnificent castle of the millionaire; and finally islands of large area covered with many farms.

Leaving Kingston, we wind in and out among these charming islands to the American town of Clayton, noted as a summer resort. Below this thriving town, island after island studding the quiet waters rises into view, the finger-tips of the great mountain range. On one of these larger isles is located the "Thousand Island Park" while a little below is the fashionable resort known as the "Saratoga of the St. Lawrence," Alexandria Bay.

From Clayton to Chippewa Bay the river with its clustered isles is like a fairyland. Hundreds of islands lie across the course of the steamer, all differing in size, coast, colouring and forming an intricacy of channels amid which only an experienced pilot can guide the steamer. Now we are entering a narrow pass between cliff-like banks covered with moss and trailing creepers, then we open into a lake-like expansion, then again among winding courses,

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through clustering islands and around rocky points. Everywhere art has combined with nature to enliven the scene. Islands are dotted with cottages in all sorts of picturesque surroundings, some perched on rocky bluffs showing among the trees, others snugly resting on low-lying islands or nestling in beautiful coves along the mainland. During the summer season the grand illumination of the islands takes place on Wednesday and Saturday evenings, when the entire region is transformed into a fairyland which must be seen to be appreciated.

The last of the Thousand Islands are called "The Three Sisters." Scarcely have we emerged from the still lingering images of the beautiful island scenery when the spires and roofs of the Canadian town of Brockville come in view. This town, named after General Brock, is built on an elevation which ascends by successive ridges from the St. Lawrence. A few miles below, Ogdensburg on the American side and Prescott on the other stand like sentinels long on duty.

THE RAPIDS

At Prescott we change from the lake steamers, which are too large to run the rapids, to river steamers with large observation decks. Soon after the last glimpse of Prescott fades in the distance we enter the Galops, the first of the series of rapids marking the downward flight of the waters. These are only a foretaste of what is to follow. We rapidly pass the picturesque Canadian towns of Cardinal and Iroquois. A little distance below Iroquois the Rapids du Plat swirl their dark green waters among a group of wooded islands. After shooting the du Platt, the steamer glides with increasing motion past a picturesque point named Woodlands and in and among bolder shores on the north side of Croyles Island into sight of the turbulent waters of the Long Sault with its snow-crested billows of raging waters. This, the greatest of the really remarkable rapids of the St. Lawrence, extends about nine miles down stream to Cornwall and is divided into channels by numerous beautifully wooded islands.

The "shooting of the rapids," as the descent by boat is called, is a most exciting experience. Navigation of the Long Sault requires exceptional nerve and precision in piloting as well as extra power to control the helm; hence the rudder is provided with a tiller besides the regular apparatus while four men are kept at the wheel to ensure safe steering, and as a result of such precautions accidents are unknown.

The St. Lawrence expands below Cornwall, forming the beautiful Lake St. Francis, twenty-eight miles in length. Below the lake we enter the Coteau Rapids. These rapids, about two miles long, are very beautiful and have a very swift current. About seven miles further down we sweep past a small island where the trees almost dip into the hurrying stream, and rounding a sharp curve we enter the Cedar Rapids. On the left is a beautifully wooded island and on the right is Hell's Hole, the greatest commotion in the river from Kingston to the gulf. These rapids are very turbulent and the passage is very exciting. Scarcely has the boat left the Cedar Rapids before she enters the Split Rock Rapids with many submerged boulders guarding the entry. One cannot restrain a shudder as the ship approaches these threatening rocks, but the skilful hand of the helmsman turns the boat aside and it passes by unharmed.

A short distance below are the Cascades, the last of this series of rapids, conspicuous by white-crested waves which mount tumultuously from the dark green waters in a choppy angry way. This group of four rapids following one another in close succession extends in length about twelve miles.

Below the Cascades the river expands into Lake St. Louis. Its shores are among the beauty spots of the St. Lawrence. After issuing from the lake we pass the town of Lachine, nine miles from Montreal. Just below the town the steamer glides into mid-stream, that moves with increasing speed, indicative of the coming rapids which now appear in full view. And soon we enter the last of the St. Lawrence rapids, the Lachine. A moment more and we have completed the descent and ride in tranquillity on the quiet waters below. Passing the

THE MARVELLOUS RIVER

No part of the St. Lawrence is more beautiful than the section including the Thousand Isles. Some of the Islands, as you see, are only ledges of rock standing above the water, others are very large and on them are built the cottages of the summer residents. Some of these are really palaces.

In the text you are told of the excitement of running the rapids of the great river. Here is just the edge of a boat going down the Long Sault Rapids, one of the most dangerous of the whole series. The pilots are so skilful that an accident is almost unknown.

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beautifully wooded shores of Nun's Island, we see the famous Victoria Jubilee Bridge.

Sweeping beneath the great bridge, we come in full view of the City of Montreal with its busy harbour, beautiful buildings of massive stone, stately churches and cathedrals, noted colleges, famous parks, and most of all, its royal mountain lifting its imperial head seven hundred and forty feet above the din and noise of the street.

DOWN THE ST. LAWRENCE

Leaving Victoria Pier we first pass Longueuil, a village in the south bank. The first town of note is Sorel, at the mouth of the Richelieu River and forty-five miles from Montreal. It stands on the site of the fort built by de Tracy in 1665 and was for many years the summer residence of the governors of Canada. About five miles further down, the river expands into a vast sheet of water, twenty-five miles long and nine miles broad, known as Lake St. Peter.

Passing the mouth of the St. Francis River, we arrive at the city of Three Rivers, midway between Montreal and Quebec. Continuing the journey, we pass St. Anne and the Jacques Cartier River, after which the land on the river banks begins to rise, presenting a bold and picturesque appearance as we near Quebec. The mouth of the Chaudiere on the south next attracts our attention. Before us is the grand gateway of the St. Lawrence, and on our left crowning Cape Diamond, is the famous citadel of Quebec. This lofty fortress, which covers an enclosed area of forty acres, three hundred and sixty-five feet above the river, was built from plans approved by the Duke of Wellington. Since the withdrawal of British troops in 1871, it has been garrisoned by Canadian soldiers.

At the base of his huge bulwark forming the "Gibraltar of America" lies the "Lower Town" with narrow streets, weather-stained dwellings, warehouses, bustle and confusion. We ascend a narrow steep street to the "Upper Town" noted for its historic battle-ground. Quaint, curious old Quebec, the most picturesque and interesting city in America, whose winding streets and frowning battlements are pervaded with the atmosphere of departed centuries. Quebec seems to have been specially formed by Nature for the important part assigned to her in the drama of this continent, for from her commanding eminence, she holds the position of guardian and sentry of Canada.

Leaving Quebec, the steamer passes the Isle of Orleans on the left, and near its eastern end Mt. St. Anne raises its head twenty-seven hundred feet above the river, and a short distance below the end of the island Mount Tourmente, nearly two thousand feet in height, with its lonely lighthouse looms against the sky. We pass Capes Burnt and Rouge and a short distance further on is Cape Grebaune, which towers twenty-two hundred feet above the steamer. A few miles eastward is Murray Bay, the favourite watering place of the Lower St. Lawrence. The river here is fifteen miles broad and its waters are as salt as the ocean itself. Murray Bay, with the grand old Laurentian mountains behind and the river in front furnishes a variety of scenery not often found in combination.

Some miles below Murray Bay the Pilgrims are seen. They consist of a remarkable group of rocks which are visible at a great distance; "the mirage" seems to dwell about them. We now reach Tadousac, at the mouth of the Saguenay River. This town was the first settlement made by the French on the St. Lawrence and was their principal fur-trading post. From this point the northern shore is rough and broken while along the southern there is an almost continuous chain of fishermen's hamlets, farm-houses, villages marked by windmills, forests and green meadows, with here and there a silvery stream winding sluggishly down to the river. The St. Lawrence grows wider and wider until it has a width of eighty miles, when it is lost in the gulf of the same name.

The St. Lawrence in its majestic course from lake to ocean offers to the traveller more of beauty and romance than any other river of the world.

Picture by courtesy of the Canadian Pacific Railway.

Stanley Park, Vancouver, is one of the chief attractions of the city. It is situated on the end of the peninsula on which the principal part of the city lies, and contains nearly a thousand acres. Some of the finest trees in North America grow here, and this group is called "The Cathedral," from the similarity of the towering trunks to the stone pillars of a great church.

TWO THRIVING WESTERN CITIES

Edmonton was founded in 1795 as a post of the Hudson Bay Company, but the population was insignificant for a century. In 1901 the population was only 2,652, but after Alberta was erected into a separate province, and the great influx of settlers began, its growth was rapid, for in 1911 the population was 30,434, and the growth continues. Manufacturing is developing, and the city will be one of the chief railway centres in the West.

Photographs by courtesy of the Canadian Pacific Railway.

The chief business thoroughfare of Vancouver is Hastings Street, a view of which is here shown. The growth of Vancouver dates from 1885, but the town was destroyed by fire the next year. In 1911, the population was 123,902. The manufacturing interests are large and increasing, and as a place of residence it has many advantages. The harbour is safe and deep, and the city is likely to become one of the great ports of North America.

THE DUKE AND THE DUCHESS OF CONNAUGHT

Photograph by Notman, Montreal.

H. R. H. Prince Arthur William Patrick Albert, Duke of Connaught and Strathearn, is the third son of Queen Victoria, and therefore the brother of the late King Edward VII, and the uncle of King George V. He was born May 1, 1850, and married, in 1879, H. R. H. Princess Louisa of Prussia. He was trained as a soldier and holds the rank of Field Marshal in the army. He has represented the reigning sovereign on several occasions, and when appointed Governor-General of Canada, January 30, 1911, to succeed Earl Grey, who had held that office since 1904, became the direct representative of the King in the Dominion.

Photograph by Brown Bros., New York.

The Duchess of Connaught is the daughter of Prince Frederick Charles of Prussia. She was married to the Duke of Connaught March 13, 1879. Their children are Princess Margaret, wife of the Crown Prince of Sweden, Prince Arthur and Princess Patricia. The last named, born March 17, 1886, accompanied her parents to Canada when her father was appointed Governor-General.

WHAT THIS STORY TELLS US

THIS extract is from that charming book, "The Marble Faun," by Nathaniel Hawthorne, who was born at Salem in 1804 and died in Plymouth, N. H., in 1864. His father died when he was only four years old and the boy led a lonely life, spending much time in long walks. He was graduated at Bowdoin College in 1824, and while there made the acquaintance of Henry W. Longfellow and Franklin Pierce, afterwards President of the United States. Though determined to write, he was forced by poverty to accept positions which were very unpleasant to him, but performed his duties faithfully, writing at night. His most important work was "The Scarlet Letter." In 1853 President Pierce appointed him U. S. Consul at Liverpool; he remained in Europe seven years, and while there wrote this book, which you must be sure to read. We cannot give the names of all his other books here, but you remember "Twice Told Tales" of course.

THE MARBLE FAUN

CONTINUED FROM PAGE 5363.

DONATELLO, while it was still a doubtful question betwixt afternoon and morning, set forth to keep the appointment which Miriam had carelessly tendered him in the grounds of the Villa Borghese.

The entrance to these grounds (as all my readers know, for everybody nowadays has been in Rome) is just outside of the Porta del Popolo. Passing beneath that not very impressive specimen of Michael Angelo's architecture, a minute's walk will transport the visitor from the small, uneasy lava stones of the Roman pavement into broad, gravelled carriage-drives, whence a little farther stroll brings him to the soft turf of a beautiful seclusion. A seclusion, but seldom a solitude; for priest, noble, and populace, stranger and native, all who breathe Roman air, find free admission and come hither to taste the languid enjoyment of the daydream that they call life.

But Donatello's enjoyment was of a livelier kind. He soon began to draw long and delightful breaths among those shadowy walks. Judging by the pleasure which the sylvan character of the scene excited in him, it might be no merely fanciful theory to set him down as the kinsman, not far remote, of that wild, sweet, playful, rustic creature, to whose marble image he bore so striking a resemblance. How mirthful a discovery would it be (and yet with a touch of pathos in it), if the breeze which sported fondly with his clustering locks were to waft them suddenly aside, and show a pair of leaf-shaped, furry ears!

He drank in the natural influences of the scene, and was intoxicated as by an exhilarating wine. He ran races with himself along the gleam and shadow of the wood-paths. He leapt up to catch the overhanging bough of an ilex, and swinging himself by it, alighted far onward, as if he had flown thither through the air. Then in order to bring himself closer to the genial earth, with which his kindred instincts linked him so strongly, he threw himself at full length on the turf, and pressed down his lips, kissing the violets and daisies, which kissed him back again, though shyly, in their maiden fashion.

While he lay there, it was pleasant to see how the green and blue lizards, who had been basking on some rock or on a fallen pillar that absorbed the warmth of the sun, scrupled not to scramble over him with their small feet; and how the birds alighted on the nearest twigs and sang their little roundelays unbroken by any chirrup of alarm.

At last, deeming it full time for

Miriam to keep her tryst, he climbed to the tiptop of the tallest tree, and thence looked about him, swaying to and fro in the gentle breeze, which was like the respiration of that great leafy, living thing.

Donatello saw beneath him the whole circuit of the enchanted ground; the statues and columns pointing upward from among the shrubbery, the fountains flashing in the sunlight, the paths winding hither and thither, and continually finding out some nook of new and ancient pleasantness. He saw the villa, too, with its marble front incrusted all over with bas-reliefs, and statues in its many niches. It was as beautiful as a fairy palace, and seemed an abode in which the lord and lady of this fair domain might fitly dwell, and come forth each morning to enjoy as sweet a life as their happiest dreams of the past night could have depicted. All this he saw, but his first glance had taken in too wide a sweep. But it was not till his eyes fell almost directly beneath him, that Donatello beheld Miriam just turning into the path that led across the roots of his very tree. He descended among the foliage, waiting for her to come close to the trunk, and then suddenly dropped from an impending bough, and alighted at her side. It was as if the swaying of the branches had let a ray of sunlight through. The same ray likewise glimmered among the gloomy meditations that encompassed Miriam, and lit up the pale, dark beauty of her face, while it responded pleasantly to Donatello's glance.

"I hardly know," said she, smiling, "whether you have sprouted out of the earth, or fallen from the clouds. In either case, you are welcome."

And they walked onward together.

Miriam's sadder mood, it might be, had at first an effect on Donatello's spirits. It checked the joyous ebullition into which they would otherwise have effervesced when he found himself in her society, not, as heretofore, in the old gloom of Rome, but under that bright soft sky and in those Arcadian woods. He was silent for awhile; it being, indeed, seldom Donatello's impulse to express himself copiously in words.

By and by, his own mood seemed to brighten Miriam's and was reflected back upon himself. He began inevitably, as it were, to dance along the wood-path, flinging himself into attitudes of strange comic grace. Often, too, he ran a little way in advance of his companion, and then stood to watch her as she approached along the shadowy and sun-flecked path. He gave Miriam the idea of a being not precisely man, nor yet a child, but, in a high and beautiful sense, an animal — a creature in a state of development less than what mankind has attained, yet the more perfect within itself for that very deficiency.

"What are you, my friend?" she exclaimed, always keeping in mind his singular resemblance to the Faun of the Capitol. "If you are, in good truth, that wild and pleasant creature whose face you wear, pray make me known to your kindred. They will be found hereabouts, if anywhere. Knock at the rough rind of this ilex-tree, and summon forth the Dryad! Ask the water-nymph to rise dripping from yonder fountain, and exchange a moist pressure of the hand with me! Do not fear that I shall shrink, even if one of your rough cousins, a hairy Satyr, should come capering on his goat-legs out of the haunts of far antiquity, and propose to dance with me among these lawns! And will not Bacchus — with whom you consorted so familiarly of old, and who loved you so well — will he not meet us here, and squeeze rich grapes into his cup for you and me?"

Donatello smiled; he laughed heartily, indeed, in sympathy with the mirth that gleamed out of Miriam's deep dark eyes. But he did not seem quite to understand her mirthful talk, nor to be disposed to explain what kind of creature he was, or to inquire with what divine or poetic kindred his companion feigned to link him. He appeared only to know that Miriam was beautiful, and that she smiled graciously upon him; that the present moment was very sweet, and himself most happy with the sunshine, the sylvan scenery,

and woman's kindly charm, which it enclosed within its small circumference. It was delightful to see the trust which he reposed in Miriam, and his pure joy in her propinquity; he asked nothing, sought nothing, save to be near the beloved object, and brimmed over with ecstasy at that simple boon.

"Donatello," said Miriam, looking at him thoughtfully, but amused, yet not without a shade of sorrow, "you seem very happy; what makes you so?"

"Because I love you!" answered Donatello.

He made this momentous confession as if it were the most natural thing in the world; and, on her part — such was the contagion of his simplicity — Miriam heard it without anger or disturbance, though with no responding emotion.

"Why should you love me, foolish boy?" said she. "We have no points of sympathy at all. There are not two creatures more unlike, in this wide world, than you and I!"

"You are yourself, and I am Donatello," replied he. "Therefore I love you! There needs no other reason."

Certainly, there was no better or more explicable reason. It might have been imagined that Donatello's unsophisticated heart would be more readily attracted to a feminine nature of clear simplicity like his own, than to one already turbid with grief and wrong, as Miriam's seemed to be. Perhaps, on the other hand, his character needed the dark element, which it found in her. The force and energy of will, that sometimes flashed through her eyes, may have taken him captive; or, not improbably, the varying lights and shadows of her temper, now so mirthful, and anon so sad with mysterious gloom, had bewitched the youth.

Miriam could not think seriously of the avowal that had passed. He held out his love so freely, in his open palm, that she felt it could be nothing but a toy, which she might play with for an instant, and give back again. It could not, she decided for herself, be other than an innocent pastime, if they two — sure to be separated by their different paths in life, to-morrow — were to gather up some of the little pleasures that chanced to grow about their feet, like the violets and wood-anemones, to-day. Yet an impulse of rectitude impelled Miriam to give him what she still held to be a needless warning against an imaginary peril.

"If you were wiser, Donatello, you would think me a dangerous person," said she. "If you follow my footsteps, they will lead you to no good. You ought to be afraid of me."

"I would as soon think of fearing the air we breathe," he replied.

"And well you may, for it is full of malaria," said Miriam. "Those who come too near me are in danger of great mischiefs, I do assure you. Take warning therefore. It is a sad fatality that has brought you from your home among the Apennines — some rusty old castle, I suppose, with a village at its foot, and an Arcadian environment of vineyards, fig-trees, and olive orchards — a sad mischance, I say, that has transported you to my side. You have had a happy life hitherto — have you not, Donatello?"

"Oh, yes," answered the young man; and, though not of a retrospective turn, he made the best effort he could to send his mind back into the past. "I remember thinking it happiness to dance with the contadinas at a village feast; to taste the new, sweet wine at vintage-time, and the old, ripened wine, which our podere is famous for in the cold winter evenings; and to devour great, luscious figs, and apricots, peaches, cherries, and melons. I was often happy in the woods, too, with hounds and horses, and very happy in watching all sorts of creatures and birds that haunt the leafy solitudes. But never half so happy as now!"

"In these delightful groves?" she asked.

"Here, and with you," answered Donatello. "Just as we are now."

"What a fulness of content in him! How silly, and how delightful!" said Miriam to herself. Then addressing him again: "But, Donatello, how long will this happiness last?"

"How long!" he exclaimed; for it perplexed him even more to think of the future than to remember the past.

" Why should it have any end? How long! For ever! for ever! for ever! "

" The child! the simpleton! " said Miriam, with sudden laughter, and checking it as suddenly. " But is he a simpleton indeed? Here, in those few natural words, he has expressed that deep sense, that profound conviction of its own immortality, which genuine love never fails to bring. He perplexes me, — yes, and bewitches me, — wild, gentle, beautiful creature that he is! It is like playing with a young greyhound! "

Her eyes filled with tears, at the same time that a smile shone out of them. Then first she became sensible of a delight and grief at once in feeling this zephyr of a new affection, with its untainted freshness, blow over her weary, stifled heart, which had no right to be revived by it. The very exquisiteness of the enjoyment made her know that it ought to be a forbidden one.

" Donatello," she hastily exclaimed, " for your own sake, leave me! It is not such a happy thing as you imagine it, to wander in these woods with me, a girl from another land, burdened with a doom that she tells to none. I might make you dread me, — perhaps hate me, — if I chose; and I must choose, if I find you loving me too well! "

" I fear nothing! " said Donatello, looking into her unfathomable eyes with perfect trust. " I love always! "

" I speak in vain," thought Miriam within herself. " Well, then, for this one hour, let me be such as he imagines me. To-morrow will be time enough to come back to my reality."

And immediately, she brightened up, as if an inward flame, heretofore stifled, were now permitted to fill her with its happy lustre, glowing through her cheeks and dancing in her eye-beams.

Donatello, brisk and cheerful as he seemed before, showed a sensibility to Miriam's gladdened mood by breaking into still wilder and ever-varying activity. He frisked around her, bubbling over with joy, which clothed itself in words that had little individual meaning, and in snatches of song that seemed as natural as bird-notes. They then both laughed together, and heard their own laughter returning in the echoes, and laughed again at the response; so that the ancient and solemn grove became full of merriment for those two blithe spirits. A bird happening to sing cheerily, Donatello gave a peculiar call, and the little feathered creature came fluttering about his head, as if it had known him through many summers.

" How close he stands to nature! " said Miriam, observing this pleasant familiarity between her companion and the bird. " He shall make me as natural as himself for this one hour."

As they strayed through that sweet wilderness, she felt more and more the influence of his elastic temperament. Miriam was an impressible and impulsive creature, as unlike herself, in different moods, as if a melancholy maiden and a glad one were both bound within the girdle about her waist and kept in magic thraldom by the brooch that clasped it.

So the shadowy Miriam almost outdid Donatello on his own ground. They ran races with each other, side by side, with shouts and laughter; they pelted one another with early flowers, and gathering them up again, twined them with green leaves into garlands for both their heads. They played together like children, or creatures of immortal youth. So much had they flung aside the sombre habitudes of daily life, that they seemed born to be sportive for ever, and endowed with eternal mirthfulness instead of any deeper joy.

" Hark! " cried Donatello, stopping short, as he was about to bind Miriam's fair hands with flowers, and lead her along in triumph, " there is music somewhere in the grove! "

" It is your kinsman Pan, most likely," said Miriam, " playing on his pipe. Let us go seek him, and make him puff out his rough cheeks and pipe his merriest air! Come; the strain of music will guide us onward like a gaily coloured thread of silk."

" Or like a chain of flowers," responded Donatello, drawing her along by that which he had twined. " This way! — Come! "

As the music came fresher on their ears, they danced to its cadence, ex-

temporising new steps and attitudes. Each varying movement had a grace which might have been worth putting into marble, for the long delight of days to come, but vanished with the movement that gave it birth, and was effaced from memory by another. In Miriam's motion, freely as she flung herself into the frolic of the hour, there was still an artful beauty; in Donatello's, there was a charm of indescribable grotesqueness, hand in hand with grace; sweet, bewitching, most provocative of laughter, and yet akin to pathos, so deeply did it touch the heart. This was the ultimate peculiarity, the final touch, distinguishing between the sylvan creature and the beautiful companion at his side. Setting apart only this, Miriam resembled a Nymph, as much as Donatello did a Faun.

There were flitting moments, indeed, when she played the sylvan character as perfectly as he. Catching glimpses of her, then, you would have fancied that an oak had sundered its rough bark to let her dance freely forth, endowed with the same spirit in her human form as that which rustles in the leaves, or that she had emerged through the pebbly bottom of a fountain, a water-nymph to play and sparkle in the sunshine, flinging a quivering light around her, and suddenly disappearing in a shower of rainbow drops.

As the fountain sometimes subsides into its basin, so in Miriam there were symptoms that the frolic of her spirits would at last tire itself out.

"Ah! Donatello," cried she, laughing, as she stopped to take breath; "you have an unfair advantage over me! I am no true creature of the woods; while you are a real Faun, I do believe. When your curls shook just now, methought I had a peep at the pointed ears."

Donatello snapped his fingers above his head, as fauns and satyrs taught us first to do, and seemed to radiate jollity out of his whole nimble person. Nevertheless, there was a kind of dim apprehension in his face, as if he dreaded that a moment's pause might break the spell, and snatch away the sportive companion whom he had waited for through so many dreary months.

"Dance! dance!" cried he joyously. "If we take breath, we shall be as we were yesterday. There, now, is the music, just beyond this clump of trees. Dance, Miriam, dance!"

They had now reached an open, grassy glade (of which there are many in that artfully constructed wilderness) set round with stone seats, on which the aged moss had kindly essayed to spread itself instead of cushions. On one of the stone benches sat the musicians, whose strains had enticed our wild couple thitherward. They proved to be a vagrant band, such as Rome, and all Italy, abounds with. It chanced to be a feast-day; and, instead of playing in the sun-scorched piazzas of the city, or beneath the windows of some unresponsive palace, they had bethought themselves to try the echoes of these woods.

As Miriam and Donatello emerged from among the trees the musicians scraped, tinkled, or blew, each according to his various kind of instrument, more inspiringly than ever.

A dark-cheeked little girl, with bright black eyes, stood by, shaking a tambourine set round with tingling bells, and thumping it on its parchment head. Without interrupting his brisk, though measured movement, Donatello snatched away this unmelodious contrivance, and flourishing it above his head, produced music of indescribable potency, still dancing with frisky step, and striking the tambourine, and ringing its little bells, all in one jovial act.

It might be that there was magic in the sound, or contagion, at least, in the spirit which had got possession of Miriam and himself, for very soon a number of festal people were drawn to the spot, and struck into the dance, singly, or in pairs, as if they were all gone mad with jollity.

Here, as it seemed, had the Golden Age come back again within the precincts of this sunny glade, thawing mankind out of their cold formalities, releasing them from irksome restraint, mingling them together in such childlike gayety that new flowers (of which the old bosom of the earth is full) sprang up beneath their footsteps.

CONTINUED ON PAGE 5501.

The fruit of the Sumach.

AMERICAN TREES IN WINTER

CONTINUED FROM PAGE 5417.

How many of us can name the trees we see in winter? Yet, if we have ever walked through leafless groves with a skilled woodcutter, we have found that he can recognise the different trees very readily. When the trees are thus crowded together he identifies them chiefly by the bark — the smooth gray bark of the beech, the deeply furrowed bark of chestnut or walnut, the silvery, or golden, or rich brown coat of the birches, and so on.

Even we can see the difference between the pale, smooth skin-like covering of a beech-bole, which always tempts us to mar it with our initials, cut deep with a penknife, and the chalky-white covering of the "silver-vested" birches, that curls back in thin sheets. If we should tear off a strip of this, we should find that it would come away like a ring, leaving a belt of fawn-coloured under-bark encircling the trunk. How different both of these are from the ragged fibrous bark of the cedar, from which shreds are continually fluttering in the wind, or from the rough, somewhat scaly bark of the white pine, and the furrowed bark of the chestnut, which reminds us of lattice-work.

When we take our winter walks, it will be amusing to see how many of the commoner trees we already can tell by sight. The evergreens, of course, will be the easiest to know. Nearly every park has plenty of them; but we can find several others growing wild in the fields and woods.

THE CEDAR

The cedar is perhaps the most common. There are several species known by this name, but they look very much alike, and together they cover this continent from ocean to ocean. We often see young trees, with tightly crowded foliage, and shaped exactly like a paint-brush, standing in rows by fences, velvety-green where the sunshine rests upon them, but almost black in the shadows. The fragrant little leaves, like scales, are wrapped around the twigs, and on some trees, bluish berries nestle among them. These bring the pretty, gray-brown cedar-birds, with their wing-feathers tipped with something precisely like drops of scarlet sealing-wax. They whisper quietly to each other as we pass through the cedars, then return to their feasting on the resinous berries.

Other birds come to the cedars for shelter, and they carry off streamers of the fibrous red-brown bark to weave into their nests. Long, long ago the Indian, too, learned how to weave the bark into ropes and sandals, although it is short and brittle. When the trees grow in groups, the trunks grow straight and tapering like masts, but

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when in fields or on the tops of sand-dunes, where the wind blows them roughly, the cedar tree becomes broad and low, and often one-sided — a tree that painters love to draw.

Its rosy wood is very fragrant, and campers delight to throw it on a bon-fire so as to smell the odorous smoke. This fragrance seems to be disagreeable to moths, however, so that chests for woollen clothing are made from cedar wood. It is also the best material for cigar boxes. It is so soft and easily cut with a penknife, that nearly all of our pencils are made from the odorous cedar.

THE YEW TREE

We have all heard the story of the English yew, and how it was bent into bows that made English archers famous. It is interesting to discover that on the Pacific coast there is another yew which looks very much like that of the Old World. It has the same flattened spray with rigid leaves, and the tapering cedar-like trunk, which reminds one of a group of slender columns pressed closely together and covered with a purplish, shaggy, fibrous bark. Its wood is tough and elastic and the Indians have always used it for bows and paddles just as the Europeans did. If we find a yew tree, however, we must be careful not to chew the foliage, or to eat the seeds nestling in the bottom of a scarlet, fleshy cup, for both are likely to poison us.

THE WHITE PINE

There are many kinds of pines, most of them valuable, which grow in America. We generally think of them as furnishing tar, pitch and turpentine (called naval stores), or lumber for many purposes. In fact, this was the reason why the magnificent white pines of New England were considered to be so important that Maine is called the Pine Tree State; and explains why she placed a figure of a pine on her colonial shillings and flag; and finally included a pine tree in her state coat of arms.

But only where the white pine grows in an open space, do we see it spreading in the broad pyramid-like form that we think of when we say "shaped like a pine tree." In forests it grows tall and straight, the lower limbs being killed by shade. It may even reach a height of two hundred feet; and these giant, tapering trunks, of firm, compact wood and straight grain, were sought as masts for sailing vessels as well as for many other purposes. Nowadays, so many white pines have been cut down that the lumber is rather scarce, and pines with harder wood, or inferior woods, are used in their place.

There are five "needles," as the leaves are called, growing together in each little case or sheath. This is a point to be remembered. The cones are long and slender, with thin, narrow, shingle-like scales, that readily open. These scales (in some pines they are thick and stiff and knobbed) in all pine-cones, serve as little roofs to shelter a pair of winged seeds fitted into hollows at their bases. When the seeds are ripe and the weather is warm and dry, these pent-house roofs are raised, and allow the seeds to fall out and twirl to the ground. But as soon as the weather becomes damp, the scales slowly shut down, and over-lapping, or fitting close, keep the seeds from becoming wet. The scales act also as a protection or armour, to defend the seeds from the attack of animals. But they are not proof against the clever red squirrel, nor the attacks of certain birds called "cross-bills," that have bills with crossed halves, which look very queer, and as if they would be perfectly useless, but are nevertheless just right for tearing apart the pine-cones.

THE SUGAR PINE

On the Pacific coast, we shall find another pine, quite as large as the white pine, which has a huge cone more than a foot long, but scarcely more than the width of a palm across. Out there, the Indians make up nutting-parties to get pine seeds, upon which they live, and this pine gives them some nuts. It is called sugar-pine, we are told, because it is one of the several trees with sweetish sap-wood, that is scraped off by Indians for a delicacy.

THE HEMLOCKS

Our Eastern hemlocks do not seem to have tempted anyone to eat them, unless partridges indulge in the tender sprays.

WHITE PINE

The most magnificent eastern pine that formerly grew in great forests in northeastern America. It is being sparingly replanted, and will thrive in light sandy soil.

BLACK WALNUT

This tree, in forests, has a tall straight trunk with deeply furrowed, dark-brown bark and heavy limbs. The nuts are nearly round, of dusky hue, with a hard shell, with shallow ridges.

Heretofore hemlocks furnished much of the cheap, splintery lumber used in house-building, but like every other great tree, they have been killed out; the use of the bark for tanning has helped.

A hemlock tree forms a splendid refuge for little birds as well as for the owls and vicious beasts that prey upon them. Many a ruffled grouse and rabbit has snuggled warm and dry under a low, swinging hemlock branch weighted down by snowdrifts. It is easy to tell the hemlocks. The narrow, little leaves are arranged on two sides of a twig, forming a knife-like spray, and their cones are very tiny. The tree, especially when young, is one of the most graceful of our evergreens.

Young hemlocks are likely to perch themselves on rocky ledges where they seldom get a good foothold for their roots; hence, they frequently blow over. They seem to be also, a special mark for lightning: I have seen a little tree in half a second stripped of all its greenery and branches, while the white core, broken at the top, and still glistening with sap, protruded from the wreckage, standing piteously among its feathery, untouched neighbours.

THE FAN PALM

In the South and West, not only the cone-bearing trees, but other kinds carry their leaves over the winter. California boasts of its great fan-palm, one of the few native palms, which sometimes grows sixty feet high, and which is often used in gardens to give a tropical air. The dead and dried leaves of many years droop in a shaggy mass, like a great fringe, beneath the living crown of green fan-shaped foliage.

THE PALMETTO

South Carolina, on the other hand, prides itself on the palmettos, trees which stand stiff and quaint along her coast, as well as along the coasts of more southern states. Although of no great value as a timber tree, the palmetto has been closely connected with the history of the state. As every schoolchild remembers, a Revolutionary fortification on one of the islands in Charleston's beautiful harbour was built of earth and palmetto logs. These are spongy and elastic, and when the British fleet in 1776 bombarded this fort, the logs received and embedded the balls without splitting.

The palmetto appeared on a medal and on the upper corner of the flag of South Carolina — " the Palmetto State " — at the beginning of the Civil War, and a crooked palmetto rises in the centre of the state's present seal.

During the Civil War, the tree with a rattlesnake (apparently twenty or thirty feet long) wound about its trunk, was figured on banner and cockade, made of strips from its foliage, and on the seal of the seceding state. Oddly enough, none of these pictures shows the proper palmetto foliage, each leaf of which is shaped like an ordinary palm-leaf fan, split at the edges into slender divisions.

Strips of these leaves are woven with rushes, into baskets and various trifles. The bases of the young leaf-stalks, surrounding the solitary bud at the very tip of the trunk, are filled with long, strong fibres. This bud, containing all the growing parts of the tree, is ruthlessly cut out, killing the palmetto, in order to get the fibres, which are made into brush-bristles. The bud, itself, is cut out by Indians and negroes and boiled as a vegetable — whence the name, " cabbage palmetto."

THE EVERGREEN OR LIVE OAK

Both East and West have evergreen or " live " oaks in their southern parts. The live oak of the southeast is generally draped with quantities of Spanish moss, but that of California displays its dome-shaped head without the hoary veil. The leaves of the latter oak resemble those of holly, and remain on the tree until the new ones appear. The acorns are long and slender and are eaten by Indians, when better ones cannot be obtained.

THE BUTTONWOOD

Of all the many trees that shed their leaves in the winter, there are several that one can learn to know at a glance. Probably the buttonwood is the easiest to discover, but we must look for it along the banks of streams or in damp places, for although it grows elsewhere,

SUGAR PINE

A magnificent western tree with a straight, thick trunk sometimes more than 150 feet high. Huge cones over a foot long, but slender, hang from the tips of the branches.

WASHINGTON FAN PALM

Which grows in the deserts of California, and is useful for planting in arid soil. It sends its strong roots far down into the sand in search of moisture.

PALMETTO

The sabal or cabbage palmetto gives a tropical look to the southern coast. The bases of many leaf-stalks remain on the trunk and seem braided.

HORNBEAM

This tree forms a very pretty rounded head with beech-like leaves. Its lower limbs are somewhat irregular in growth. The seeds are sheltered by a three-lobed bract.

the buttonwood likes to have plenty of moisture for its roots. In fact, it often grows so close to water courses as to be undermined by them, and then tumbles in, while the great disc of roots rests edgewise on the bank. This tree can be seen afar, for great flakes of its dingy thin bark fall off, leaving curious white patches of inner bark gleaming on trunk and limbs. Countless balls of seed swing gaily from its clumsy branches through the winter. Towards spring they are broken up, being composed of little nuts, each with a tuft of rusty wool, and the birds help to tear them apart. In the Mississippi Valley the buttonwoods (or sycamores, as they are often called) grow to a great size, but are then often decayed within, only a mere shell of their wood and bark surviving. Early settlers utilised these vast hollow trunks, sometimes ten feet across, for smokehouses, grain-bins and the like, and even constructed shelters for themselves, by cutting great pieces of the thin walls of the cavity.

THE HORNBEAM OR IRON WOOD

Not far from the sycamore, we may find the small shapely hornbeam or iron wood. Both of these names refer to the extremely white and surprisingly hard wood contained in the slender furrowed trunk. So tough is it, that homemade brooms could be fabricated out of fine strips of iron wood. A "withe will last almost as long as iron wire, and an ox-gad . . . is nearly equal to a leather one."

The flexible branches of the European hornbeam, which closely resembles ours, were woven together to make those curious walled and roofed alleys of old-time gardens. Blue beech it is sometimes called, from its blue-gray bark smoothly stretched over its hard-looking, irregular trunk and limbs, and from the similarity of its foliage and round head to the larger tree.

THE SUMACHS

We shall doubtless see some sumachs when we are tramping across barren fields. There is nothing easier to distinguish on account of the cone-shaped masses of berries, each covered with crimson plush, which hold their own bravely during the winter.

In another article, we have spoken of the poison-sumach with its poisonous, dry white berries hanging like grapes. While all are closely related, it is to be remembered that any sumach with velvety, red fruit is safe to handle. In fact, one may taste the red plush berries, which are very acid, and not agreeable. Chickadees love them, and revolve about the spires until they gradually swallow all the seeds. In winter, we see why the staghorn is so called. Its thick, awkward, extremely brittle branches have a curve upwards not unlike a deer's horn.

THE SHAGBARK

Probably the shagbark, that tall, handsome hickory which farmers often leave standing in their pastures on account of the sweet-flavoured nuts it bears, will be an upland tree that we shall soon espy. If it is a full-sized tree, it will have a rather small and narrow head with a few crooked branches, bristling with smaller ones, pointing more or less upward. The trunk is generally tall, straight and slender, and it looks as if it had been shingled rather badly. Long narrow strips of its gray bark have become loosened at the sides and lower end and are attached only at the top, whence they hang like flaps or "shags." The hickory is famous not only for its seed-kernels, but for its strong, durable wood, which also makes splendid fire wood.

THE SASSAFRAS

In searching for the shagbark, let us not confuse with it the quaint sassafras. It is also rather tall and straight but has a peculiar crown. The branches look as though they had started to grow to the right, then to the left, then swing back, and so on. The branchlets grow stiffly and crookedly upward, giving an oblong, round-topped outline which curiously reminds one of a many branched candlestick. The lower bark is deeply furrowed, gray and corky-looking, but the upper and smaller branches are smooth and yellowish-green.

The sassafras is one of the trees that grows smaller and smaller as it goes northward. In New England it is almost a shrub. But it is extremely

SHAGBARK

One of the most valuable hickories, both as a timber tree and for fuel. It is sparingly cultivated for its pleasant flavoured, thin-shelled nuts.

SASSAFRAS

A quaint little tree in the north, of little value for timber. It is aromatic in bark, leaf and root, and is used in rootbeer, sassafras tea, etc.

LIVE-OAK

A handsome but not valuable tree of California. Its holly-like foliage falls just as the new leaves are appearing. Its acorns are sometimes eaten by Indians.

WHITE PINE TRUNK

The trunk of the white pine, when given room and light, does not grow so straight and tall as when crowded in forests. The lower branches then die.

BIRCH SPRAY

Birches are frequently planted in parks for the sake of their beauty. Their lovely delicate spray is justly appreciated in winter, especially in the weeping varieties, where the twigs are elongated.

HEMLOCKS

Hemlocks usually grow on cool rocky hillsides, and sometimes have so slight a roothold that they blow over in tempests. They seem to attract lightning.

CEDARS

One of the commonest and most picturesque of our evergreens. Its wood is used for pencils and cigar boxes. It was a sacred tree to many Indian tribes.

CATALPA

A splendid tree when in flower, in July. The white, purple-spotted corollas are borne in great panicles. The leaves are broadly heart-shaped. It is often seen in parks.

BUTTONWOOD

This great tree, the buttonwood, or sycamore, as it is often called, is sometimes planted, like its European relative, in city streets, where it apparently thrives.

difficult to get rid of, for the merest fragment of root will start growing. These aromatic, warm-tasting, orange-skinned roots are the most valuable part of the sassafras. Probably the colonists learned to include them in root-beer by discovering that the Indians before them had made a drink out of sassafras.

THE WALNUT

At one time there were many black walnut trees scattered throughout our timbered lands, especially in the great forests of the Middle West. They were so common, and the wood was so readily split, that people made fence-rails out of them, saving one or two trees somewhere, perhaps, for the sake of the rich nuts. Then there was a call for black walnut as a material for cabinet-work and furniture. Its rich-brown, hard and firm wood can be readily polished and is light as well. But the demand for it, and the wasteful ways of the early settlers caused the larger trees to be entirely destroyed, and we seldom see fine specimens unless they have been saved near houses, or in an occasional pasture. Then we shall find that it becomes a noble tree with broad, rounded head, supported by a straight trunk, and wide-spreading heavy limbs, somewhat awkward in their manner of branching. The lack of delicate spray, and the odd, horn-like arrangement of the stubby branchlets, give the black walnut when leafless, an unfinished, gaunt look, which, with the dark-brown furrowed bark, will help to tell us what it is.

THE WHITE OAK

The white oak at first glance might be confused with a field grown black walnut, for it also has a splendid dome-like head. But it branches more regularly, is straighter, and is subdivided into smaller twigs. Its immense lower limbs stretch far out, level with the ground and not far above it. It is apt to have many faded leaves clinging to the twigs throughout the winter. They are oval in shape with regularly and deeply indented edges. The bark is rough and pale, and the wood is also light-coloured, tough and elastic. One should always be able to tell the white oak either in winter or summer, for it is one of the most valuable of our trees, not only on account of its majestic form, but for its timber.

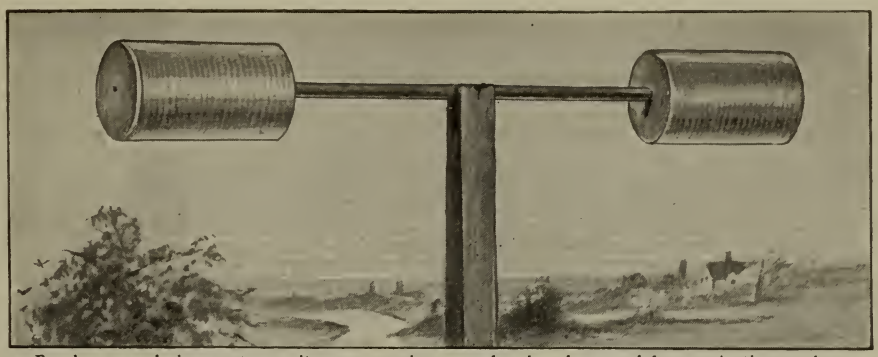
THE CATALPA

A wild-wood tree, that we shall scarcely find growing north of Philadelphia except in cultivation, is the catalpa, or Indian bean, as the settlers in the South called it, having an idea that the slender cylindrical pods looked like snap-beans, and being in the habit of calling any native object "Indian" this or that, whether the actual Indian had anything to do with it or not. Certainly no Indian had any interest in the "beans" of the catalpa, for they contain nothing but rows and rows of winged seeds overlapping one another and forming a central rod in the leathery shell. But the pencil-like pods swinging from the twigs all over this ungainly tree, with its short trunk and wide spreading, not to say sprawling, branches promptly give us a clue to its name.

THE BEECH

The catalpas lack that delicate feathering of small twigs that we call "spray," but this is the chief feature of the elm, the beech and the birches. The beech's twigs grow smaller and finer as they approach the ends of the branches and are finished by the long, sharp leaf buds; but the birches have the most exquisite "spray" of any of our trees, except perhaps that of the American elm. In fact, winter is the best time to see the birches for then the delicate twigs, too fragile, it would seem, to stand the stormy weather, but really so flexible as to bend before it and thus escape danger, stand out clearly against sky and snow. And, when spring comes, and the yellow-powdered tassels are trembling on the spray, how they are tossed and flung about by the elastic branches, thus scattering the fertile powder to be carried on the wings of the wind. If the birches had no value as timber-trees, or oil producers, or bark-furnishers, for the many uses of the Indians, they would still be of inestimable value as ornamental trees for their spray alone.

THE NEXT STORY OF NATURE IS ON PAGE 5477.



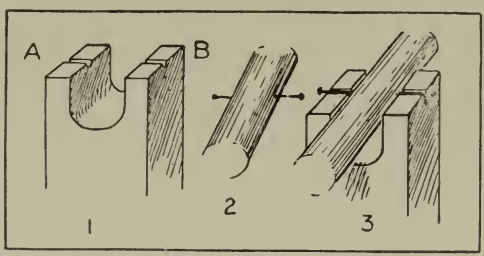
The home-made barometer as it appears when completed and erected for use in the garden

A BAROMETER MADE AT HOME

CONTINUED FROM PAGE 5358.

THERE is a barometer of an entirely different kind from those that most of us know, that works very well, costs little for material, and can be made by any careful and persevering boy.

First of all take two sheets of stout white paper of good quality, stiff in texture, and of any convenient size. A good size would be twenty inches by thirty inches. Now let us roll up each sheet into a cylinder, and glue the edges in position, so that we have two tubes, or pipes. We next cut out, or ask a carpenter to make for us, four round pieces of wood exactly the right size to fit in at the ends of the cylinders. If there is any difficulty about getting round pieces of wood we may cut these drumheads out of thick cardboard ; but let us remember that the cardboard must be very thick indeed. The boards, or drumheads, being quite ready, we fix these in the four ends of the cylinders, and glue the paper to the edges of the boards, so that they are perfectly air-tight. There must not be the least opening anywhere for the air to pass.



1. The grooves at top of the post. 2. Nails in the poles for balancing. 3. How the pole balances on the post

We now take a pole of any suitable length, an ordinary blind-rod is very suitable for the purpose, and with glue fasten a cylinder to each end, as seen in the picture on this page. We should be careful to see that the pole is fixed exactly in the centre of the round end of each drum, or cylinder.

Now let us decide where we are going to fix our home-made barometer. It is best to put it in some position sheltered from the rain, though open to the air—under a verandah outside the house, or under the roof of an open shed. Having selected the spot, we erect a post of any suitable height—four or five feet would do admirably, although the height is not a matter of the least importance. Dig a hole, and insert the post so that it is perfectly upright. Then fill in the hole and press down the earth all round. The next thing we have to do is to shape out a groove in the top of the post, as seen in the first diagram. We can do this with a keyhole saw, and can then smooth the groove with emery-paper. At the places marked A and B in diagram 1 we cut two little grooves crosswise, and polish these very smooth.

The groove at the top of the post is for the pole with the drums to work in. We take the pole, and on each side drive in a pin, these pins being for use as pivots to work in the small grooves A and B. We move the pins until we get them in a position that enables the pole to balance on top of the post with the two drums, or cylinders, exactly on a level with each other. Then we take out the pins and replace them with smooth, thin, strong French nails, as shown in diagram 2. The pole balances on the post, as in diagram 3.

Only one thing is now needed to make our barometer indicate the changes in the weather. We bore a hole with a good-sized gimlet in one of the wooden ends of one cylinder only. This establishes communication between the outside air and that in the cylinder, while the air in the other cylinder is that which was enclosed in it, and is cut off from outside air. If the outside air is heavier than that in the closed cylinder, the cylinder with the hole will go down, and this indicates fine weather ; while if the surrounding air is lighter than in the closed cylinder, the cylinder with the hole will rise, and this means wet weather is coming.

THE GAME OF MAKING RHYMES

A VERY good pastime for boys and girls, and for grown-ups, too, as they sit round the table on a wet evening, is to make up two-line rhymes, each taking it in turn to give to the others the word they are to use at the end of the first line, and for which they must find another rhyming word at the end of the second line. It is quite easy to make up a two-line rhyme, provided that the word given is one which has many other words rhyming with it. For instance, the word *then* might be given, and we might have some such couplet as this:

A little nonsense now and then
Is relished by the wisest men.

The great idea in playing this game of making rhymes, however, is, when our turn to give a word comes, to pick one that has no rhyme.

There are many such words in the English language, and here are some of them: Alb, breadth, bulb, chimney, coif, depth, doth, eighth, fifth, film, fugue, gulf, hemp, lounge, mouth, mourned, ninth, oblige, orange, of, pint, polka, pork, porringer, prestige, puss, sauce, scarf, silver, sixth, spoil, sylph, tenth, twelfth, plagued, warmth, wasp, wharves, widow, width, window, with, wolf, wolves.

When it is someone else's turn to give a word to which we must find a rhyme, and they give a word like one of these, it is worth knowing that the difficulty may sometimes be overcome by ingenuity. For instance, orange and month have been used in this way:

From the Indus to the Blorenge
Came the rajah in a month,
Eating now and then an orange,
Conning all the day his Grunth.

The Blorenge is a hill near Abergavenny, and the Grunth is the sacred book of the Sikhs. Here are two other attempts with month:

"You can't," says Tom to lisping Will,
"Find any rhyme for month."

"A great mithtake," was Will's reply;
"I'll find a rhyme at wunth."

How many weeks in a month?
Four, as the swift moon runn'th.

Another rhyme to orange is the following:

I gave my darling child a lemon,
That lately grew its fragrant stem on;
And next, to give her pleasure more range,
I offered her a juicy orange.
And nuts, she cracked them in a door-hinge.

Porringer is a difficult word to rhyme, but the difficulty has been met in these ways:

The Second James a daughter had,
Too fine to lick a porringer;
He sought her out a noble lad,
And gave the Prince of Orange her.

When the nations doubt our power to fight,
We smile at every foreign jeer,
And with untroubled appetite
Still empty plate and porringer.

A rhyme can sometimes be made by splitting a word at the end of a line, as in the following example, which gives a rhyme to polka:

Our Christmas tree produced a doll ca-
Parisoned to dance a polka.

Window and widow have been rhymed.

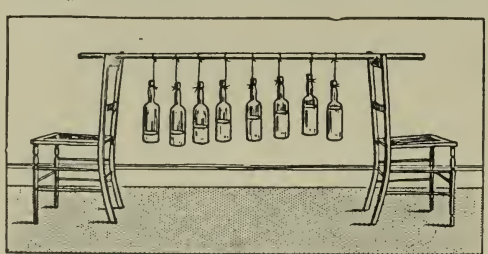
Bold Robin Hood, that archer good,
Shot down fat buck and thin doe,
Rough storms withstood in thick greenwood,
Nor cared for door or window.

Since of this suit I now am rid oh!
Ne'er again I'll lodge with a widow.

When difficult words are given for rhyming, it always causes surprise and adds greatly to the interest of the pastime if we can overcome the difficulty in some ingenious way like those given.

A MUSICAL INSTRUMENT FROM OLD BOTTLES

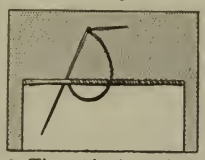
AN amusing and clever musical instrument may be made from a number of old bottles, such as we buy lime-juice or vinegar in. Even medicine bottles will do, but the bottles should be all the same size. Having collected our bottles, we take an ordinary broomstick and rest this on the backs of two chairs as shown in the picture. Then we tie the bottles to this stick, so that they hang loosely and not too close together. Now comes the work of tuning up, and this we may do by pouring water into the bottles, a different quantity into each, putting more water for a low note and less for a high. To get the note of each, we tap it with a stick—the edge of a boxwood rule is a very good thing for this purpose. With patience and perseverance and a little ordinary care and skill, we shall at last have our bottles all tuned and ready for use, and we can now play the curious instrument by striking the bottles with the edge of the rule. Of course the bottles need to be strong, or the striking would break them, but we need not strike very hard. It will be found that simple tunes can be played on the bottle-bells, and after some practice we can take two sticks and thus play quicker tunes. It is, of course, essential that the bottles should be hung at such a distance that they do not knock against each other when struck with a rule or stick. Much fun can be obtained from this home-made instrument, which should only be used out of doors, in case the bottles break and the water runs out on the ground, although there is no need, if care be exercised, to have any such accident.



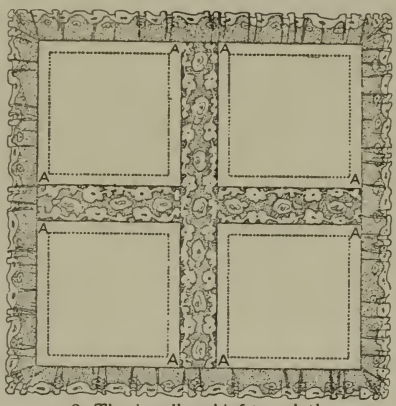
MUSICAL BELLS MADE FROM OLD BOTTLES

A DAINTY AFTERNOON TEA-CLOTH

UNTIL we have tried it, we can have no idea what a pretty afternoon tea-cloth can be made of four linen handkerchiefs joined together by strips of lace. Nothing could be simpler, or easier to make, and we shall find that this is the best way to set about the work. Buy four plain linen hemstitched pocket-handkerchiefs of equal size, and lay them side by side, in two rows, to form a square, leaving a space of about 1½ inches between them, to be filled in by lace insertion, as shown in picture 2. We must measure carefully the quantity required, because the size of handkerchiefs varies considerably. The insertion should be joined to the handkerchiefs by means of *whipping*, or tiny over-and-over stitches, which, in case we have forgotten, are worked as shown in picture 1. We lay the edge of the insertion against the edge of the handkerchief, working the two together in this way, but being careful not to pull the stitches too tight. They should be just tight enough to hold them together. The next thing to be done is to sew on all round the cloth a frill of lace to match the pattern of the insertion, which adds in no slight degree to the general effect of the cloth.



1. The whipping stitch



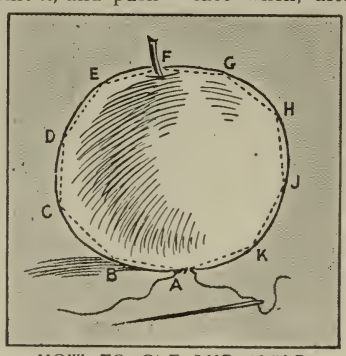
2. The handkerchief tea-cloth

This lace should be whipped up and then joined to the cloth. We must make a tiny hem of the rough edge of the lace, whip it, and draw up the cotton until we have got the lace to the right fullness, remembering that if it is too full the effect is not pretty. The gathered frill should be joined to the cloth, just in the same way as we joined the insertion. It is important, of course, that the lace should be put on quite evenly, and the only way to be sure of doing this is to divide the length into four parts, which should be marked with pins, and, later, when the whipping is done, pinned to the four corners of the cloth.

The insertion will need to be carefully joined to the lace where the two meet, at the places marked A A in picture 2. To make it quite firm, the insertion should be finished off with a tiny hem, to which the lace can be afterwards sewn. If something more elaborate is wanted, little embroidered handkerchiefs could be used instead of the plainer ones shown in the picture. Plain linen handkerchiefs cost about 20c. each, and the embroidered ones a few cents more; while for the lace we can pay almost any price we choose.

CUTTING AN APPLE INSIDE WITHOUT PEELING IT

TO cut the inside of an apple in half without cutting the peel may seem impossible, but it is not really so; and if we follow these directions we shall be able to perform this puzzling feat. Take a good, crisp, sound apple of moderate size, and a needle with thin but strong thread, such as is found in any home. Now insert the needle at the point A, and push it through the apple to the point B, pulling a good length of thread through, but leaving 10 or 12 inches hanging out at A. Now insert the needle again at B, and push through to C, drawing the thread well through; then thread from C to D, and so on right round the apple and back to A, forming in the course a decagon, as shown in the picture. We now have the two ends of the thread hanging out at A, and if we pull these gently but firmly downwards we shall, with the thread that forms the decagon, round the inside of the apple, be able to cut the inside of the apple clean in two without injuring the peel. The thread is, of course, pulled right out at the bottom, A.



HOW TO CUT THE APPLE

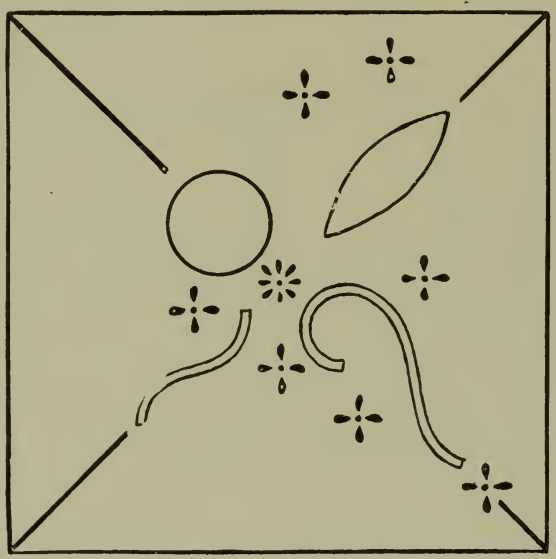
This feat is capable of considerable development. Having cut the apple in half in the manner indicated, we can again thread the apple all round in another direction, and cut it into quarters, and then in still another direction, dividing it into smaller pieces.

Much fun is to be had from this feat, for we may give a friend an apple thus divided, with the request that he will peel it for us. It is very amusing to watch the expression on his face when, after peeling the apple, he finds that the inside is cut up. Any boy can perform this feat after a little practice, but we must be careful to choose a sound apple, and also a strong thread that will not break when we pull the ends to cut the apple. Of course, a very thick thread should not be used, or the places where the needle is inserted would be too conspicuous. On the other hand, with a thin thread of sufficient strength, the holes made by the needle and thread need not be visible, or, at any rate, not visible except upon a very careful examination.

We should not choose a large apple until we have had considerable practice with those of smaller size, as the larger the apple the more difficult it is to pull the thread through without breaking it and without making a rather ragged mark at the bottom of the apple.

A CARD THAT HELPS US TO MAKE DESIGNS

On this page we see a square with a black line running from each corner towards the centre, and contained in this square are four designs—one a circle, another shaped something like a leaf, the third is like a ?, and the fourth is a double curve, something like a printed S flattened out nearly straight. In addition to these four figures there are eight stars dotted about at intervals. From this simple square we can make a great number of different designs, some of which are very complicated. We must take an exact tracing of this square, and cut out a similar design in cardboard. This will save us from spoiling our book. Having cut out the square in cardboard, we place it upon a sheet of white paper, and run a pin through the black dot in the centre of a little star—any star will do. We must be very particular to see that the pin holds firmly, otherwise our design will be spoiled. We shall now begin to make our design, using, let us say, the circle. We take a soft lead pencil that has been sharpened to a nice point, and make a mark on the white paper opposite the corner of the square, the line from which points to the circle.

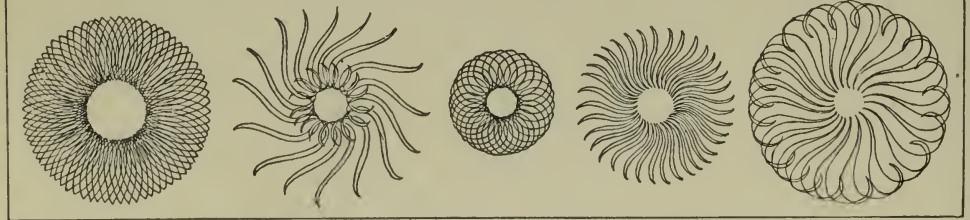


THE GEOMETRICAL DRAWING CARD

Now we take our pencil, and, beginning on the edge of the circle nearest the centre of the square, we draw round and round the circle continuously again and again, but as we are drawing we keep on gradually and slowly shifting the square card round a little to the right. We keep on drawing round and round the circle, and at the same time moving the card slowly and evenly round at the same pace until the corner comes back to the spot from which it started. If we now remove the card, we shall find on the paper a circular design similar to the middle one shown in the set of designs in the second picture. Whether the lines are close or wide apart depends upon the rate at which we move the square card round as we are drawing the circles. If we want the lines very close we must shift the square slowly, and if we prefer them wide apart we must move the square quickly.

The important thing is to see that we move the square at the same pace throughout. If this be not done, we shall get an irregular design instead of the neat and regular design we expect. When we have practised with the circle we might try the leaf design, drawing our pencil round and round as we did in the circle. In making designs from the other two figures the pencil must be run continuously from one end of the figure to the other, backwards and forwards, along the whole length of the curve or slit. On this page we see a few of the simpler designs, but when we become more expert we can use two, or even more, of the figures in making one design, thereby getting very beautiful and intricate patterns. The designs will be of different sizes, according to which star it is that we place the pin through as a centre.

There are several things we must not overlook. To begin with, we should always make the pencil-mark opposite one corner of the square, so that we know exactly when the card has been right round on the pin. If this is omitted, we shall probably overrun the starting-point, and spoil the design. Much, too, depends upon the pin remaining upright and immovable, for if it shifts we shall spoil the regularity of the pattern. Above all, we must remember that the whole beauty of the picture we are making depends upon the uniform rate at which we move the square and the pencil while drawing.



SOME OF THE DESIGNS THAT CAN BE MADE WITH THE GEOMETRICAL DRAWING CARD

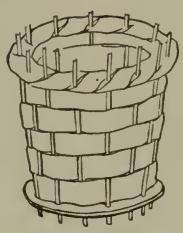
The designs shown in the second picture are only a few of the beautiful patterns that can be made with this little device, but they show the possibilities of the geometrical drawing card.

WHAT TO DO WITH A BUNDLE OF STRAW

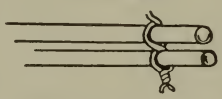
THERE are quite a number of toys that can be made out of a bundle of straw, and if we look at the pictures on this page we shall see two or three that are well worth making.

The basket is perhaps the easiest to make, so we will attempt that first. To begin with, we shall have to pay a visit to a big stationer's, or a kindergarten shop, and buy a bundle of straw. From this we pick out thirteen straws of exactly the same length. Leaving these for a moment, we find a piece of cardboard, which must be cut quite round. This is for the bottom of the basket. Now we bore thirteen holes round the edge of it, taking care that they are at the same distance apart. The best way to go to work is with a little compass. The holes must be large enough to admit the straws, and yet not large enough to allow them to slip out again. A little ordinary care will be needed, but we shall be well repaid for all our trouble.

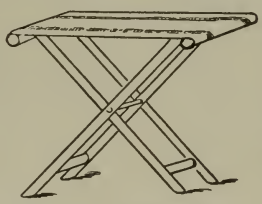
Now we fix the straws in the holes, leaving them standing out just a little at the bottom to form the feet. The sides of the basket come next, and these are made by weaving very narrow ribbon in and out among the straws, beginning at the bottom. If we have no ribbon handy, a long, narrow strip of coloured tissue or crinkled paper will do quite as well. When we reach the top, we turn the ribbon or paper under and over the last row to form a round border, as shown in picture 1. Then we tuck the end out of sight, after touching it with gum, and our dainty little paper-basket is quite complete.



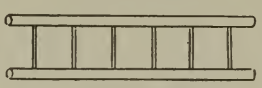
1. The basket



2. Twisting the wire for the seat

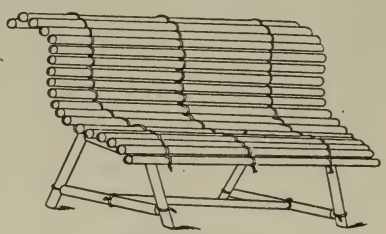


3. The camp-stool



4. The ladder

The garden-seat, shown in picture 5, is almost as simple to make. The part forming the back and seat is made of nineteen straws, joined together with florist's wire, which can be bought for a nickel a spool. They must be fastened exactly in the middle, and to do this properly it is as well to mark the exact centre of each straw with a pencil before making a start. We need six pieces of wire twice the width of the straws when they are placed together. We begin by twisting the ends of two lengths of wire together and bringing them back and front of the straw, as shown in picture 2. Twist the wire and treat each straw in the same way, until the whole of the nineteen are fastened in the middle. Then fasten off the ends just as we started them.



5. The garden-seat

The two ends of the back and seat must now be handled in the same way, as shown in picture 5, and care should be taken that all the ends of the wire are finished off neatly.

Now for the foundation to hold the straws together and to keep the whole firm. The two long straws in the oblong for the top of the foundation of the seat should be fully an inch shorter than those we have just fastened together, to avoid their showing, and the short ones that come across should be just slightly less than the width of the seat. We thread these four straws with wire to make them firm, form them into an oblong, and then secure the ends of the wire.

The four legs are all of the same length, and, as we can see, slope outwards. We fasten them at the top with gum or fish-glue, after they have been hollowed a little with a sharp knife and fitted into the oblong straws. The bottom of the foundation has only three straws, two short ones to hold out the feet, and one long one. These are fastened into place with wire. First the short ones have wire passed through their hollow centres, then the ends of the wire are fixed round each leg and twisted to keep it tight and firm. The one long straw is threaded with wire, and the ends twisted round the middle of each of the short straws, as shown in picture 5. For the foundation of the back of the seat, the reclining part, we make another oblong, and fix it firmly to the back straw of the lower oblong with wire. Then we glue the back of the seat to its support, and the little garden-seat is quite complete. The camp-stool, which can be seen in picture 3, is made of four long straws of equal length, two short ones to serve as supports for the legs, a piece of fancy paper for the seat, and two straws of exactly the same width as the seat to keep the paper firm. For a beginning it would be a good plan to gum these straws to each end of the paper, ready for use when the little stool is made. Now we bore holes in one side of each of the long straws only, and in exactly the same place on each. Then we fix in the short straws, which act as supports, as seen in picture 3. The long straws are now placed in the form of an X, and fastened with a good-sized pin, which should have the point at once turned up with pincers. We place into position, and touch the top of each of the four supporting straws, or legs, with gum, and then lay the seat over. The top of the legs should come right against the ends of the paper that has been gummed round the straw.

A fine little ladder can be made of two full-length straws, threaded with wire. the rungs being made of shorter lengths of straw, fitted into holes that have been cut in the uprights to receive them. The distances apart should be carefully measured and marked before we attempt to cut the holes, as shown in picture 4.

A sharp pair of small scissors should be used for boring holes, or, better still, a stiletto, such as one often finds in an ordinary needle-case.

THE PUZZLES OF THE WIZARD KING

1. TRANSPOSITIONS

Complete, I am a letter strongly pronounced; behead twice, I am a robber; behead again, I am angry; behead again, I value; behead again, I am the past tense of a verb meaning to devour; curtail, I am a preposition; restore to "value" and transpose, I lacerate; curtail, I am a beverage; restore to "lacerate" and behead, I am part of the head; transpose, I am a fixed point; restore to "value" and curtail, I am an animal; reverse, I am a sailor.

2. SINGLE ACROSTIC

My initials will form the name of a great statesman.

(a) A game; (b) a flower; (c) an animal; (d) a weapon; (e) a bag; (f) a town in France; (g) a precious stone; (h) a girl's name; (i) a tree.

3. THE DINER'S REPLY

A gentleman was seen coming out of a restaurant by a friend, who said to him:

"Well, did you have a good meal?"

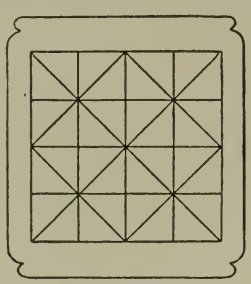
The gentleman replied in the following curious way:

"I 80."

Can you say what he meant?

4. THE MAGIC SEAL

This strange seal was used by an Eastern king upon all his state documents, and it was a favourite habit of his to ask all who came to the court, and those to whom he sent letters and commands, to count the number of triangles of all sizes in the square design in the middle of the seal. The courtiers spent a great deal of their time trying to solve the problem that had been set. Some gave one number and some another. How many triangles are there?



The king's seal

5. RIDDLE-ME-REE

My first is in mountain, but not in hill;
My second's in river, but not in rill;
My third is in corn, but not in rice;
My fourth is in snow, but not in ice;
My fifth is in rye, but not in oat;
My sixth is in ship, but not in boat;
My seventh's in stone, but not in slate;
My eighth is in soon, but not in late;
My whole, no doubt, will plainly show
A poet great we all do know.

6. ENIGMA

The poet Schiller wrote this verse. Can you guess what he means?

A bridge weaves its arch with pearl
  High over the tranquil sea.
In a moment it unfurls
  Its span, unbounded, free.
The tallest ship, with swelling sail,
  May pass 'neath its arch with ease,
It carries no burden, 'tis too frail,
  And when you approach it flees.
With the flood it comes, with the rain it goes,
And what it is made of nobody knows.

7. DOUBLE ACROSTIC

My initials give a poet, if you read them with ease;
Finals, one of his poems, which many will please.

1. A bold, daring person, who goes forth for fame.
2. With meadow or prairie you will find this the same.
3. To ensnare or beguile by this word is said.
4. And Socrates wooed her when she was a maid.
5. A poet of Italy next you must find.
6. Merriment reversed, at least to my mind.
7. A very simple thing, easy to write.
8. One or t'other, not both, this word doth indite.
9. Full of guilt, but conscience-struck.
10. To jerk, to tug, it is my luck.
11. A lake that bathes Canadian shore.
12. Palsied like this, my last I could not reach.
13. As in the wild, the ground it hurries o'er.

8. CHARADES

My first may spring from a grey goose wing;
  A king is but my second;
Of the works of men my third has been
  The bravest object reckoned.
And without my first my whole would be
A thing unknown to you and to me.

9. THE PUZZLING BIRDS

Two birds were talking one fine day,
  About each other's names.
The one cried out: "Now come let's play
  At little children's games."

"Done!" cried the other, "but I've no head
  For puzzles, you'll agree;
Give me your head, and have instead
  The head that owneth me."

The first agreed, and his looks sable
  Part of a ship became!
The other was a vegetable,
  And neither knew his name!
What were the birds?

10. BURIED FLOWERS

Shall I put this scrap in Kate's album?

Tell your father I called to see him.

What lovely hair! I should like mine to curl like it.

If that man is insane, money should not be given him.

My cousin Ada is your sister-in-law.

My brother is gone to Japan, Syria, and India.

Will Mr. Carlo be liable for this?

Hark! how Tom and Sarah are bellowing in the nursery.

I read to that poor negro several times a week.

This case is urgent; I anticipate a good sum.

11. TWO SHORT YEARS

Why was the year 1888 so short? If you know, can you say why the year 1889 was shorter still?

12. SQUARE WORDS

1. A hunt; a hut; to take advantage of; a French river; a girl's name.
2. Not wild; a field; to signify; an Irish lake.

13. CONUNDRUMS

What is the only thing that can live in the midst of fire?

When may a bird be said to occupy a feather bed?

Which is the longest letter in the alphabet?

Which word is shorter for having a syllable added to it?

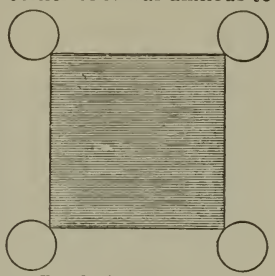
What is that which by losing an eye has nothing left but a nose?

Which is the best way to make a coat last?

What is that which nobody wishes to have and nobody likes to lose?

14. THE FIELD AND THE PONDS

A farmer who had a square field with a round pond at each corner of it was anxious to double the size of the field and still have the four ponds on the borders of the field. But he wanted to keep the field square in shape. This is a diagram of the fields and ponds as they were originally. How did the farmer double the size of the field, keep it square, and yet manage to have the four ponds on the borders, as he wished to do?



The field and the ponds

ANSWERS TO PUZZLES ON PAGES 5357 AND 5358

1. Spokes: 1. Iota; 2. Idyl; 3. Ibis; 4. Iron; 5. Idol; 6. Isis; 7. Iris; 8. Isle. Tyre: "Alps on Alps arise." Pope.

Inner Circles: 1. Try, and you will soon find it all. 2. Oh, do be sure to discover this all.

2. Begin with the first bracketed words, and then read the words above and so on.

Do not covet all you see, for he who covets all he sees often wants more than he sees.

Do not tell all you hear, for he who tells all he hears often tells more than he hears.

Do not spend all you have, for he who spends all he has often spends more than he has.

Do not say all you know, for he who says all he knows often says more than he knows.

3. Roach, shad, cod, herring, turbot, barbel.

4. BLIND
LOVER
IVORY
NERVE
DRYER

5. A river.

6. Cowslip—Buttercup.

7. The diagram shows the course of the pen. In order to make this clear, spaces are left

where the lines should be extended so as to meet.

8. Between the dark and the daylight,
When the night is beginning to lower,
Comes a pause in the day's occupations
That is known as the children's hour.

9. Leaves, eaves, aves, save.

10. The squirrel takes out one ear of corn each day, and his own two ears.

11. The letters are, L, B, T, O, D, J (jay), P and A (aye).

12. (a) Titus Andronicus; (b) William Shakespeare; (c) Cornelius; (d) Cleopatra; (e) Duchess of Gloster; (f) John of Gaunt; (g) Coriolanus; (h) Andromache.

HOW TO SHARPEN A PENCIL

In pointing a lead pencil with a knife, if we have strong, steady fingers we hold the pencil in the left hand, point toward us, and, placing the right thumb under the end, cut the wood and lead to a point while turning the pencil gradually round with the left hand.

HOW TO PEEL FRUIT

To peel an apple or a pear, we hold it firmly in the left hand, and, starting at the "eye," pare it thinly and evenly round and round the fruit till the stalk is reached. We must see that no little patches of peel are left on the surface and that the peel is not cut too thickly. Stone-fruit is sometimes conveniently peeled in strips downward. A banana is held upright in the left hand, and the rind stripped down in sections toward the other end.

HOW TO MOVE A PENNY WITHOUT TOUCHING IT

THERE are many coin tricks with which we can amuse ourselves and entertain our friends, and one of the simplest is that of moving a penny without touching it. To perform this trick we require five or six coins; pennies or any other coins will do.

We should see that the table has a smooth surface, otherwise the trick will not work successfully. Placing a penny on the table, we ask the company present: "Can anyone move this coin without pushing the table, or touching the coin with the body, or with anything held in the hand or mouth, and without blowing it?"

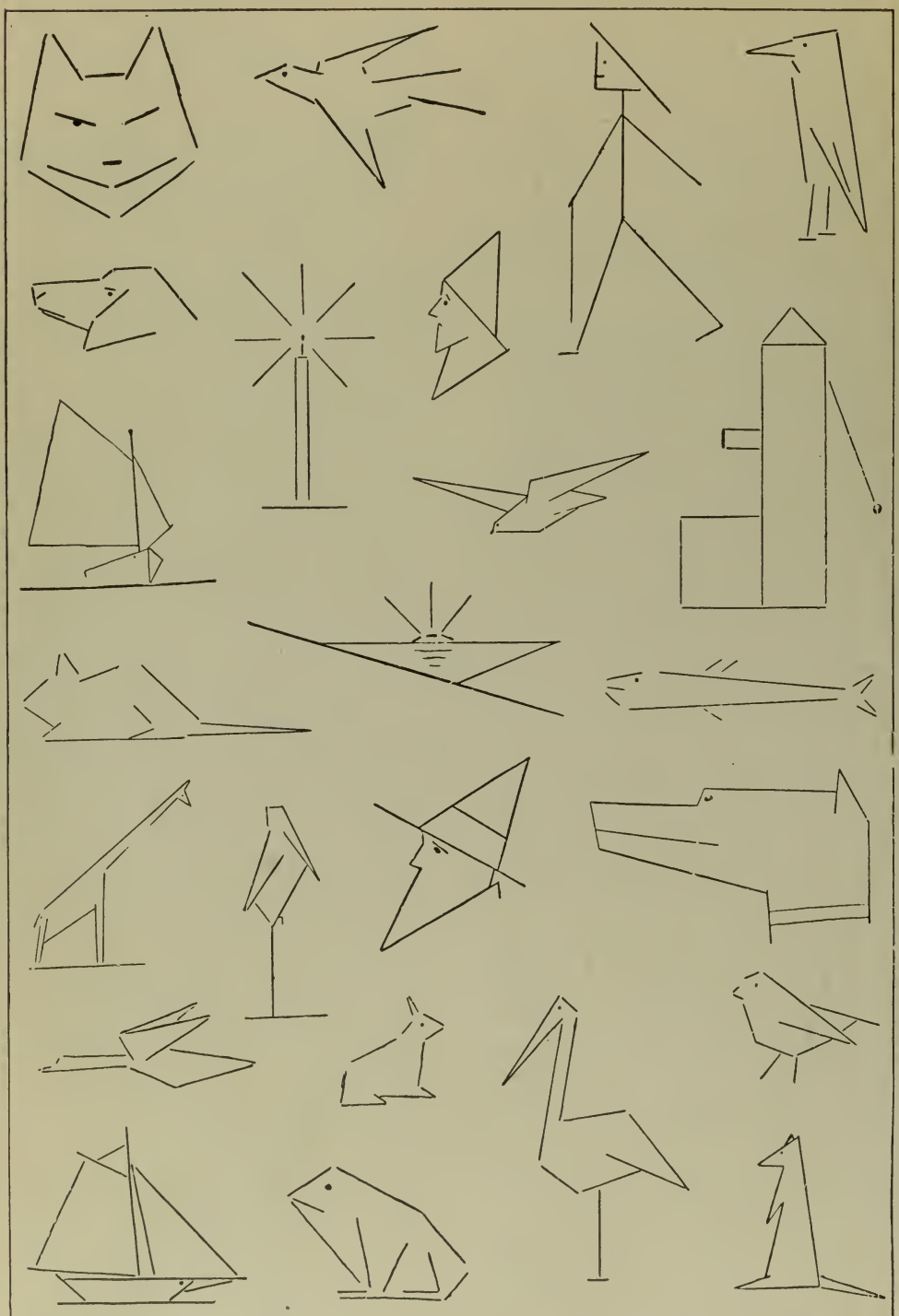
Someone is almost sure to say that the thing is impossible, whereupon we inform them that the trick is quite easy, and proceed to show them how it is done.

We take four or five other coins, and place them all in a line at the edge of the table. Each coin must just touch the coin adjoining, and the coin that we are to move without touching must be the last coin at the left-hand end of the line. The great thing to bear in mind is that all the coins must touch.

We then press firmly on the coin at the right-hand end of the line, so that it is impossible to move it. Then we take another coin, and, pressing upon it with the first finger of the right hand, we slide it along quickly so that it gives a smart tap to the coin that we are holding down. Instantly the coin at the other end of the line will move along an inch or two, although the coin that we tapped has not moved at all.

The reason why the end coin behaves in this manner is easily explained. When the first coin is struck, energy is imparted to the struck coin, and this energy is transmitted from one coin to another until the end coin, having nothing to stop its progress, moves along.

HOW TO DRAW A PICTURE WITH 12 LINES AND A DOT

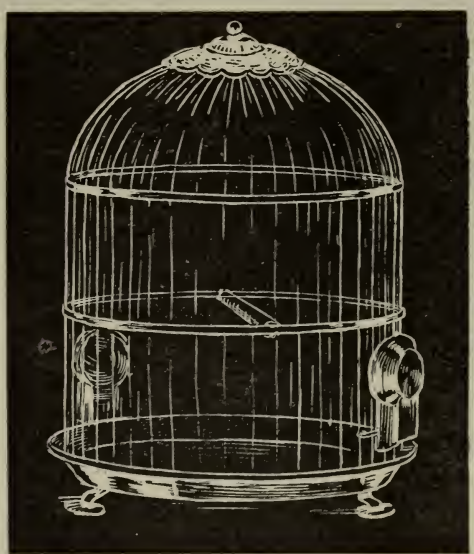


These clever pictures were all drawn by boys and girls, and they are all made up of twelve straight lines and one dot, neither more nor less. It is far more difficult to draw anything if we are confined to a few lines than if we can put in as many lines as we like. Let us see if we can make some drawings with twelve lines and a dot as good as these.

MAKING SPINNING PICTURES

ANY boy or girl can easily make for himself or herself a series of pictures from which a good deal of entertainment can be derived. Cut out a piece of cardboard the exact size of one of the black pictures on this page. Upon one side of it trace the fish seen in the top picture on the left, keeping it in the exact position on the card as shown in the picture and making all the rest of the card black; on the back of the card trace the grill shown exactly as it is in the top picture on the right side. Now make two pinholes in the card, and fix to each side of the picture a piece of thin string or a piece of thread as seen in the small picture in the middle of the page. That picture, of course, does not represent the size of the card, but only the method of fixing the string or thread. Then twirl the string between the fingers and thumbs and the card will spin round rapidly, making the two pictures blend into one so that the fish will seem to be lying on the grill.

The lower pair of pictures, showing the parrot and the cage, can be made in the same way. When the card is spun, the parrot will seem to be inside the cage.



MAKING A BASKET OF RAFFIA WORK

RAFFIA is another name for bass, which we use in the garden for tying up plants. It hangs in a familiar yellow bunch in the greenhouse, and we all know it quite well. Here we are going to learn how to make a basket-bag with it.

There are two kinds of this material, one a little coarser in texture than the other. This is really the bass, and it comes from the bark of the lime-tree ; while the raffia, which is finer, is made from a palm grown in Madagascar. Specially prepared raffia may be had at all good fancy-shops in large or small hanks. As it can never be got in very long pieces, frequent joins are necessary, and the simplest way to join it is to make an ordinary knot and cut the ends off neatly —but not too closely or it will come undone again—for we are going to use raffia like wool, and work it into a basket with a crocket-hook, afterwards plaiting a handle, and finally decorating it with small tassels. When we get our bundle of raffia we undo it and shake it out, then we select about forty of the nicest and longest strands, having as nearly as possible an equal thickness. There are always one or two unsatisfactory strands in every bundle. Those with a hard, green edge are not nice to work with, for they split as we twist them round the crochet-hook. We knot our strands of raffia together, cutting away any thin, straggling ends, and winding it round a postcard as we join it.

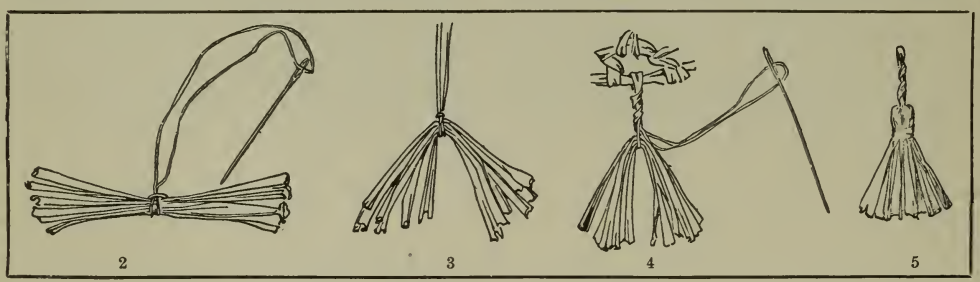
HOW TO JOIN THE RAFFIA

The knot to use is shown in picture 1. We tighten it by pulling both ends and both strands from either side *together*, and then pinch the ends back along the strand with the fingers to make them lie flat. It is best to leave about an inch, and if the ends do not " work in," we can cut them off from our basket afterwards. This is a pleasanter task than it sounds, as the raffia has a very fresh, hay-like smell, which comes out as we handle it.

We must use a bone crochet-hook of medium size, and the secret of success is to work very loosely. Each loop must be sufficiently large for the next one to be pulled through easily.

To begin our bag, we make 20 chain stitches ; return, making one treble into each alternate chain, missing the chain in between, but making one chain between the trebles. The next row is made of one double crochet into the hole formed between the two trebles, and one chain in between each double crochet, so that there will be 10 chain and 10 double crochets in each row. This makes the body of our basket, and is continued backward and forward for 22 rows. The 23rd row is the same as the 2nd— a line of trebles and chain. We must adjust with our fingers, and straighten out our work if necessary, as we go along. We finish off in the usual way, and press our strip of work with a warm iron.

Any projecting " ends " are now snipped off with the scissors, and we proceed to make a bag of our strip by folding it in half and joining up the two sides. To do this we take a darning-needle with a big eye, and thread it with a *thin* strand of raffia, and sew the sides together with "over-and-over " stitches.



HOW A RAFFIA TASSEL IS MADE

If neatly done, the join will hardly show. The four tassels ornamenting the bottom of our bag are made of six or seven stout strands three inches long. We tie them across the centre, as shown in picture 3, with a double strip of fine raffia, threaded through a needle. We must pull it tight, and pinch the two ends together, as shown in picture 4. But before we quite finish the tassel, or give it its little " waist," we attach it to the bottom of the basket by passing the needle through a double stitch, drawing the tassel nearly up to the basket, leaving a quarter of an inch of raffia, round which we wind our thread. We insert the needle in the tassel again, and come out just low enough to make the " waist," as shown in picture 4. A double twist round the raffia will do for this, and then we make a knot to keep the bind firm by making a buttonhole stitch into the bind. We pull it tight, and cut off our thread, leaving the end as long as the tassel. We do not cut it off short, because raffia is so springy that

THE BAG COMPLETE

it might come undone. There are four tassels, and each one is, of course, made and fixed in the same way.

Now for the handle. We take six strands of stout raffia, thirteen inches long, and plait them together in twos—just as we plait our hair—tying the ends for the time being with a piece of cotton to keep them together. To fix the handle to the basket, we undo one end of our plait for about one and a half inches, take three strands, and thread them between a treble at the side of the top of the basket. We pull them all together again, and join them to the other three strands with a bind, which is made by winding a thin thread round and round, as we have learnt to do for the tassels. For these two tassels we shall need to go round several times, and must finish off with *two* knot stitches this time, for the handle has to bear a greater strain than the tassels on the bottom. We fray out the remaining end of the plait which forms the tassel, and cut off any uneven ends, fix the other side of the handle in just the same way, and our bag is finished.

If the raffia is hard when we buy it, it can be plunged into hot water and left until cold; removed, shaken, and used when dry. It will then have become quite soft and pliable.

THE GAME OF WHAT IS IT

SOME FAMILIAR THINGS THAT WE ALL KNOW

A NUMBER of well-known things are described on this page, and, after reading each description, we should try to guess what the particular thing that is referred to is. The correct answers are given in the next part of Things to Make and Things to Do.

1. Here is a hard, dull little bit of something that looks as if it had come out of the earth. No wonder its name means "foam," for it is so light that once it floated on the top of a hot, vaporous stream in an island of the Mediterranean. After the stream had cooled, someone picked up the foam, thinking that it would be useful for scraping paint off wood or for taking ink off fingers, or that it might be powdered and made into soap.

2. Look at this dainty, fragile little object on the window-sill, with its cool feel, soft as a feather's. It is not really white. If we look close, we see that it is transparent, with six delicate arms. Perhaps we can see only four. Then two must have been knocked off during a long journey, when its companions jostled it as they all tried to get here first. There! It can't stand our hot hands, and has vanished, leaving a wet spot.

3. Ages, perhaps 50,000 years ago, millions and millions of tiny creatures lived on the surface of the sea. As they were soft, they found it necessary to make armour for themselves as a protection against the creatures that gobbled them up, so they took lime out of the water and made themselves hard coats. When they died, their little bodies sank down to the bottom of the sea in such numbers as to bury up the bodies of fish. The descendants of these tiny creatures are doing just the same thing in the Atlantic now, and what do you think their coats, pressed together, make?

4. "Thud—thud—thud!" goes a wonderful machine, which seems to work all by itself. It is very busy pumping, and its labour must be most important, for it goes on for years and years, not ceasing for a minute's rest. It is made in two halves, each of which is in two divisions, opening into one another by valves. Can you tell what it is?

5. Suppose we can shrink up much smaller than Alice did in Wonderland, and swim inside the hole in this brown thing from which a spurt of water has ceased to pour, and go down the passage. We are going against the stream, and, as we proceed, the passage narrows. There are turnings this way and that, and strange little jelly-like creatures live in nooks along the sides of them, and whip us back with their long arms, for they say we have come the wrong way, and the whole colony is wanting its dinner. So we drift out of the passage again. Every day we handle a similar dwelling-place of these small creatures. What do we call it?

6. There is something which can kill a man or a tree, cure some kinds of disease, boil a kettle, propel a vehicle, destroy a building, give us light, or carry messages for us. We can store it in our bodies, too, and it is even in the tiniest atoms. What is it?

7. One day, by mistake, a little grain of sand drifted inside the shell of a creature living at the bottom of the sea. No one likes to swallow grit, and this animal did not want the sand; but, being unable to get rid of it, it had to make a fluid to cover the hard, sharp grain of sand and prevent it from hurting. Then it made more and more coverings, until no one would have thought that this beautiful, shining, smooth thing was formerly a grain of sand. What is it?

TWENTY-FIVE WAYS OF SAYING THE SAME THING

THE following line from Gray's Elegy is probably unique, in that it can be transposed in twenty-five different ways, and yet each time express practically the same thought:

The ploughman homeward plods his weary way
The weary ploughman plods his homeward way
The ploughman, weary, plods his homeward way
His homeward way the weary ploughman plods
His homeward way the ploughman, weary, plods
The weary ploughman homeward plods his way
The ploughman, weary, homeward plods his way
His way the weary ploughman homeward plods
His way the ploughman, weary, homeward plods
His way the ploughman homeward, weary, plods
His homeward weary way the ploughman plods
Weary, the ploughman homeward plods his way
Weary, the ploughman plods his homeward way
Homeward his way the weary ploughman plods
Homeward his way the ploughman, weary, plods
Homeward his weary way the ploughman plods
The ploughman homeward, weary, plods his way
His weary way the ploughman homeward plods
His weary way homeward the ploughman plods
Homeward the ploughman plods his weary way
Homeward the weary ploughman plods his way
The ploughman, weary, his homeward way plods
The ploughman plods his weary homeward way
Weary, the ploughman his homeward way plods
Weary, his homeward way the ploughman plods

WHAT GAMES DO THESE PICTURES REPRESENT?

THE

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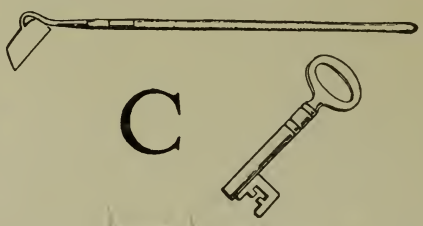
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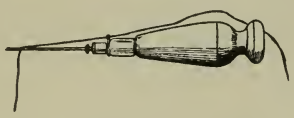
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The names of the objects and scenes shown in these pictures, together with the letters given, spell correctly the names of ten games that boys and girls play. Examine the pictures and see how many of these names you can build up in the manner indicated. The answers are given in the next Things to Make and Things to Do.

THE NEXT THINGS TO MAKE AND DO BEGIN ON PAGE 5521

DUBLIN CASTLE, THE OFFICIAL HOME OF THE IRISH GOVERNMENT

A MONTH IN IRELAND

THE COUNTRY AT THE END OF THE EARTH

CONTINUED FROM PAGE 5340.

With our travel armchairs drawn up to the table and maps and pictures spread out, we are enjoying the first stage of our holiday—anticipation—which in this case means looking things up and planning a tour. For years we have longed to go to Ireland, "the country at the end of the earth," as it is called in the oldest books. What shall we choose out of its beauties, north, south, east, and west, for our first visit, and by what route shall we cross the sea?

Shall we go directly or shall we go first to England? We can do either easily, but we finally decide that we shall go to London first and then go immediately to our own Ireland.

AN OLD CELTIC CROSS
Still standing at Monasterboice, in Ireland

"Ireland!" shouts our motor-mad boy, opening the discussion. "We might travel right round the island, like Captain Deasy, 1,000 miles in a motor in six days, and get some idea of the country——"

"Especially of the hills, and the rain, and, above all, of the rough roads," says father gruffly, in his beard.

"And then," continues the boy, "we could settle down at Belfast to see the docks and shipbuilding, and that electric travelling crane 180 feet high."

But this is not at all what the rest of us want, and we burst out excitedly:

"We must see Killarney!" "And think of the Giant's Causeway, his loom, organ, eyeglass!" "How foolish to go to Ireland and not see Dublin and the Celtic crosses, the round towers and the chimney-top rocks that the Spanish Armada sailors took for a castle!" "And that beautiful west coast! We simply must stand on the oldest mountains of Europe and watch the sun slowly setting." Little by little we talk it all over, and, as our plans take shape, we see that we must give up the idea of Belfast and the Giant's Causeway and Donegal in the north, and beautiful Wicklow in the east. At last anticipation passes into realisation as we find ourselves at

THE SPLENDID HARBOUR OF KINGSTOWN, WHICH A CENTURY AGO WAS A MERE FISHING VILLAGE

half-past eight in the morning in the train from London to Holyhead, which we reach soon after two o'clock, feeling that going to Ireland shows us a great deal of England. Thence we take boat to Kingstown, the port of Dublin, and find about three hours of the rough sea quite enough. Another half-hour of train, and we are in "Dublin's fair city"; only nine hours from one capital to the other.

We reflect that it was by no means so easy and quick a journey when Nicholas Brakespeare, the only English Pope, made a present of Ireland—out of his stock of islands—to Henry II. After this—how we should hate being given away ourselves!—Dublin, and the long, narrow tract of country on each side of it and behind it, called the Pale, became a sort of foothold for the English, from which they could proceed to conquer the wild tribes and rebellious chiefs beyond. Naturally, the first thing we want to do next morning is "to travel edgeways" on a real Irish car. We find it rather jolty, and it is difficult to hold on, so we willingly transfer ourselves to the cars, which run in all directions. With their help, we soon get a good idea of the city. Also, we have a fine view from the top of Nelson's Column, right away to the Bay of Dublin, on the east, and to the surrounding semicircle of mountains on the landward horizon.

We get another fine view of the city from the wide O'Connell Bridge over the River Liffey, where four street-cars can be seen abreast. It takes us some days to see the chief sights of Dublin. We start with the Science and Art Museum, which lies on the south side of the Liffey, between the College Park in which stands Trinity College—the University of Dublin—and St. Stephen's Green, a delightful pleasure ground. We are guided first to the Natural History Annexe, where the skeletons of

THE OLD IRISH PARLIAMENT HOUSE IN DUBLIN, WHICH IS NOW USED AS A BANK

the now extinct gigantic Irish deer fill us with wonder at their great strength of neck. In the main building we devote our whole time to the magnificent collection of Irish antiquities in the West Rooms.

But we must pass on to the fine examples of early Christian art, reminders of the preaching of the Gospel to Ireland in the fifth and sixth centuries. St. Patrick's Bell, St. Columba's Crozier, or Crook, the Cross of Cong, are among the chief treasures. The casts of the Celtic crosses set up in many parts of Ireland are also to be seen in this museum, and they bring to mind the labours of the early missionaries.

a Danish king of Dublin founding a priory church where Christ Church Cathedral now stands. This cathedral and St. Patrick's have lately been restored.

We are anxious to see the castle, where a Danish fortress once stood. It has been built and rebuilt through the centuries since the time of Henry II., and has been used for many purposes. It was long a citadel to defend the city in the English interests ; and the courts of law have been held here ; since the time of Elizabeth it has been the residence of the Viceroy, who governs as the representative of the sovereign.

SACKVILLE STREET, DUBLIN'S FINEST THOROUGHFARE, SHOWING THE O'CONNELL MONUMENT

In the library of Trinity College we see one of the most beautiful old books in the world, the copy of the Four Gospels, called the Book of Kells, with splendid paintings and illuminated letters, from the seventh century.

Also in the library we see the famous harp said to have belonged to the old Irish hero-king, Brian Boru, who fought the Danes so hard about the year 1000. These fierce Danes worked great havoc in the churches and monasteries of Ireland, as they did in Britain, where, in the north, Christianity had been preached by St. Columba and his successors. Eventually the milder faith conquered, and we find

Here are held grand balls and state ceremonials during the season, as in London. In the Presence Chamber are a throne and canopy, draped in crimson poplin. Poplin is the fine silk and worsted material which is made in Dublin.

We feel especial interest in the Bank of Dublin, for this very fine building was formerly the Irish Parliament House, where the Lords and Commons used to meet to make laws, before the Act of Union with Great Britain in 1801. Since then the Irish members and lords have had to go to Westminster. As we walk about the fine streets and squares of Dublin, and look at the

statues of many noble Irishmen, we recall what we know of the history of the island, and of the lives of her patriot sons. The great bronze statue of O'Connell brings to mind one of the greatest of these. With all the strength of his fine nature and his splendid eloquence, he worked to the death to obtain equal religious rights for his unhappy country. Would that we could have heard that strong, sweet voice! A generation later, we find it almost impossible to believe the terrible hardships that were inflicted on the Irish people, solely because their religious faith happened to be different from that of their rulers.

A BIRDSEYE VIEW OF IRELAND, SHOWING THE ROUTE FOLLOWED AND THE PLACES VISITED

Father Mathew, the great temperance reformer, who could sway thousands to his will, Curran and Grattan, the fine speakers and patriots, are all held in loving remembrance in Dublin.

Part of the year the Viceroy lives in the Phœnix Park, one of the finest parks in the world, just outside Dublin. We reach it by tram, and greatly admire the beautiful avenues and woods, and the tame deer, the lake in the Zoological Gardens, and the statue of that great Irishman, the Duke of Wellington. It was down one of the great avenues of Phœnix Park that Queen Victoria slowly drove between dense masses of children, assembled from all parts of Ireland, in the last year of her long and useful life. Another excursion that we take before leaving Dublin is to Clondalkin, to see the nearest ancient round tower. There are many of these towers in Ireland. It is now thought that they were used as refuges from the Danes. This one at Clondalkin has walls three feet thick, and its door is fifteen feet from the ground, and the tower, which gets narrower to the top, is eighty-four feet high, and quite perfect. It is believed that it is a thousand years old. On the top is a pointed caproof. We would fain take still longer excursions to see the ruins and famous crosses at Monasterboice; to see the weedy banks of the Boyne where was fought the battle that decided the fate of James II. and settled his son-in-law, William the Dutchman, on the English throne. Still more would we like to go to the little green hill of Tara, where there is not even a ruin to be seen of the Tara's halls which once re-echoed to the wild music of the Minstrel Boy. Tara is for ever famous in song and story as the real old capital of the Irish nation.

But we have planned to go westward, and so we take the Midland Great Western Railway right across the central plain of Ireland to Galway, a very dreary journey.

PEOPLE OF IRELAND AND THEIR HOMES

Here is a typical Irish peasant woman returning to her home after gathering wood.

In this picture we see an Irish family that has been evicted, or turned out of its home. The people are very poor, and are often unable to pay their rent.

The Irish live to a great age, and here we see a very old peasant woman.

In Ulster the people are much better off than in the other parts of Ireland. This picture shows us the inside of a cottage at Dervock, in County Antrim. It is particularly interesting, because it is said to have been the home of the ancestors of William McKinley, the President of the United States, who was assassinated at Buffalo in 1901.

This is a familiar scene in Ireland. The boy is leading a donkey, which is carrying a load of peat in two baskets.

Here we see an Irish farm. The buildings are small and rough, very different from the average of our farms.

The photographs on these pages are by W. Lawrence, Guy & Co., J. Valentine, the H. C. White Co., and the Great Western Railway.

In the Midlands of England we pass towns so close together that they seem to run into each other, all full of people and factories, and there are noise and bustle and smoke everywhere. In the Midlands of Ireland, so soon as the well-cultivated land round Dublin is passed, there seems nobody about, except a few peasants cutting and stacking peat from the dark, dreary-looking bogs, or cultivating the patches where the peat has been dug out. Here and there we pass little lakes and little rivers, and the Royal Canal, which stretches right across Ireland.

At Athlone, about the middle of Ireland, we cross the Shannon, the largest river in the United Kingdom. In our maps we have often drawn its course from its little beginnings north of Lough Allen, thinking, as we did so, of the little rills leaping down from the wet mountains to join it, of the chain of lakes into which the river broadens, of its imposing cascades, and of its final sweep into its splendid estuary with its islands and its bays, past the town of Limerick, into the wide Atlantic.

THE HAPPY CHILDREN OF KILLARNEY

As we gaze from our carriage window over the brimming river and the fine hayfields on its banks, we wish we could follow it to the sea, through the lovely Lough Derg ; but we are speeding on to Galway, and at the end of our journey we rejoice to feel ourselves at last in the long-desired west. The town of Galway interests us much, with its traces of Spanish buildings, reminders of the days when trade in Spanish wines was brisk and flourishing.

But the spell of the old Celts is upon us. We find ourselves ever looking out westward, as they did, to the dim blue islands of Aran, thirty miles away. There is a steamer that takes passengers as well as pigs and all that the islanders need, and in three hours we are there.

What a never-to-be-forgotten time we spend in fine sunshine on the chief of the islands ! Was there ever such blue water, such grey rocks, with green ferns growing in the cracks ? How wonderful it seems to us to see not only fragments of a castle built in this far-away spot, in Cromwell's time, but the foundations of a round tower belonging to early Christian times and a cluster of churches whose "sweet bell" once sounded over the still air. It is now lost in the sand.

The strongest ones of our party are bent on going on to see the fort of Dun Aengus, whose walls, eighteen feet high and nearly as thick, have been standing on the edge of a cliff 300 feet above the sea since centuries before the days of St. Patrick. The rest of us are content to sit on the dry, soft sands and look from sea to sky, from the white gulls to the pale green fields, and think again and again of the rough times, of the early Christians and their buildings and their earnest faith, of the Danes and the English all plundering in their turn.

But even yet we have not satisfied our westward longing, and we do want to see Connemara, so our next move is to Clifden. We have often imagined the wild beauty of the lakes of Corrib and Mask, and the gaunt grandeur of the mountains between them and the sea, but we feel speechless when we see the Twelve Pins, or Bens, the bare rugged mountain masses in all their age and majesty before us. We could watch for hours the sun and shadows on the lakes and on the purple heather. We spend many days, only wishing they were months, walking and climbing, and each evening, when it is fine, looking and looking at the sunsets—facing America.

We are able to realise, in the presence of this bareness and solitude, the awful days of the Irish famine, only about sixty years ago, when the potato crop failed, and the poor creatures who lived almost entirely upon that "root of poverty," many always hovering on the border of starvation, died in hundreds and thousands. Whole families died of hunger in Connemara. "All joy was darkened ; the mirth of the land was gone."

It has been well said that the famine broke Ireland's heart. Many of the strongest and best that survived it felt so hopeless and despairing that they left their country for ever, seeking homes and careers across the Western Ocean.

Ireland has indeed had little of joy or mirth through many centuries. The English interfered but little till the times of the Tudors, keeping more or less to the

THE BEAUTIFUL LAKES OF KILLARNEY

This is one of the delightful lakes of Killarney. The rock peeping out of the water is called the Colleen Bawn.

Here we see the upper lake, with the picturesque road that runs by the side of the blue and shining waters.

*There are three lakes at Killarney, and the upper lake, shown in this picture, is the most beautiful, though it is the smallest. The margins, with the wooded hills beyond, have been described as "the most magnificent shore in the world."

From this picture we get some idea of the luxurious growth of the wild flowers and other plants at Killarney.

The three lakes are joined to one another, and here we see the meeting of the waters of the middle and lower lakes

* Photograph copyright by H. C. White Co.

Pale round Dublin. Unhappily, when England began to carry the conquest farther, it was at a time when she had just turned Protestant, and bitter religious feelings were stirred up and as a sad result much of the kindly feeling was absolutely lost. All along, the position has been like that of two people of different natures, who cannot or will not understand each other. England has to be ashamed of terrible cruelties in its efforts to subdue the Irish, particularly in the time of Cromwell, and the Irish have frequently retaliated when they could. So it has gone on in a miserable circle—tyranny and persecution under the name of religion, met by rebellions and risings, followed by cruelties that remind us of the old savage days of the famous Assyrian kings.

TARA HILL, WHERE THE FAMOUS HALL OF IRISH KINGS STOOD

Of late years troubles have continued in Ireland because so many landlords have cared nothing for the people who lived and toiled on their estates, and the people, in poor districts, have been either unwilling or unable to pay the rents of their miserable fields and cabins. It makes us sad to see the cabins which shelter the very poor in Ireland, pigs and chickens all living with the family. The huts have mud floors, often no chimney, and scarcely any windows or comforts of any kind. How many ruined homes we see, too, as we travel about; the hearths are cold, the families gone.

INSIDE ST. PATRICK'S CATHEDRAL, DUBLIN

A VIEW IN PHŒNIX PARK, DUBLIN

Before the Hunger, as the famine is sometimes called, families had begun to cross the sea to America, to share in its good wages and prosperity, and noble help they sent to the Old Country in its great distress. Emigration increased much more after that terrible time. The sadness of the departure of an emigrant ship haunts us, as do the echoing words of the well-known plaintive "Lament of the Irish Emigrant—I'm sitting on the Stile, Mary." We have many days in our holiday in which we can stay indoors to read up the story of Ireland. Wet days are to be expected on the Emerald Isle—which, however, is brown as much as green. Sometimes we tramp about in thick boots and waterproofs, and much enjoy the fair blinks when they come, and the most wonderful rainbows we have ever seen. Other days, a book and a peat fire are all that heart can desire, except a chat with the people about, when we have a chance. In spite of all their troubles, the Irish are famous for taking amusing and bright views of life. We find the western accent very different from that of Dublin, and are delighted to hear some real old Irish, and we only wish we could read and understand it. Three weeks of our holiday are gone, and we still say we *must* see Killarney; so we take the train southward, past Limerick—where beautiful

lace is still made—and past Tralee, to Killarney Station. We are most fortunate in having a whole week of fine weather, and each day is taken up with excursions by brake and by car, by boat on the three lovely lakes, on foot, climbing the hills for grand views, or to the best points to see waterfalls. Each fresh beauty that we see we think the most wonderful of all, whether it be the fine ruins—all so full of interesting stories—or the islands covered with glorious trees and shrubs and wild flowers, or the leaping cascades, or the wild gorges between the mountains, or the ever-varying colours of the steep slopes. How delightful, too, are the soft breezes, and the wonderful misty light over all! We feel that we can now understand the Irish poet, Thomas Moore, writing of the fairy Isle of Innisfallen. It is all fairyland.

ATHLONE AND THE RIVER SHANNON

THE ROUND TOWER OF CLONDALKIN

We think as we look again at the map of this south-western part of Ireland that it would be delightful to spend a whole summer holiday in it, to linger among the lakes, to climb the purple mountains, and explore the long, narrow inlets of the ragged coast. Their water is purple-blue, running far into the heart of the mountains, which are the highest in Ireland. And now for home, direct across the south of Ireland to Rosslare, in Wexford, which takes us five hours. We are sorry to have to miss Cork, and especially its harbour, where Drake managed to hide himself so cleverly from the Spaniards, and which, like Bantry Bay, could hold the whole British Navy. We should have liked, too, to perform the gymnastic feat of kissing the Blarney Stone, so as to secure, as the saying goes, a soft, persuasive tongue. We get a good view of the country which produces so much of the butter and other good food sent away from Cork and the rest of the southern ports. Our journey from Rosslare to Fishguard, across St. George's Channel, takes about three hours, and the strong sea breezes refresh us for the rest of our railway journey. Beautiful Killarney in the early morning, and London in the evening! And all our meals in comfort in the train.

The journey is so easy that we wonder why more people do not make it every year. Certainly they can find no more beautiful country anywhere in the world. Then, too, the people are so interesting. The Irish have a reputation for their wit and their politeness and we must agree that it is well deserved. How much interested the people were when they found that we were from America! It seemed that almost every one we met had a relative in America. It made us wonder how the island ever could have held them all.

ARAN ISLAND, WHICH LIES OFF GALWAY BAY

The next Story of Countries is on page 5557

MRS. HEMANS, THE CHILDREN'S POET

YOUNG people may rightly claim Mrs. Hemans as their very own poet. She is not one of the greatest poets, but she is sure of immortality; her poems will be spoken and sung, we all believe, as long as the English language endures—and why? Because the children of all ages love her and her poetry.

In her day, she was one of the most popular poets in the world, but her popularity waned, as it was bound to wane, because her work was not strong and bold and vigorous enough to hold the admiration of men permanently.

THE WELSH HOME OF MRS. HEMANS, NEAR ST. ASAPH

Scott explained the reason; to him it seemed, he said, that her poetry, much as he admired it, contained too many flowers and not enough fruit. It was pretty, musical, correct, abounding in tenderness and high religious thought, but it lacked depth and strength. Men tired of it as they tire of a sweet little song, as children tire of sweets and confectionery.

But the children have not tired of Mrs. Hemans. To them she remains a perfect heroine, and a sweet, beloved singer. The children's books contain many of her poems, as they always should, and it is because the children love her and her poems that her immortality is assured. It is right that children should love her and her work, for she dearly loved children. Had she not so loved children she would have been a greater poet. She poured out her poems that she might have money with which to feed and clothe and educate her five little boys, and her work killed her. Had she written less, she would have been able to write better. Still, as it is, she has left us songs and poems which the children will for ever keep alive.

Felicia Dorothea Hemans was born at Liverpool on September 25, 1793. Her father, George Browne, was at one time a prosperous merchant, but misfortune overtook him, and he had to give up business and go to live at Gwrych, in North Wales. There Felicia grew up with her six brothers and sisters in surroundings of natural beauty, which inspired her with the poetic passion. She early began to write verse, and her parents were so unwise as to publish a little volume of the poems which she had written before she was fourteen. The work was badly treated by the critics, but Shelley, the great poet, saw the poems, and, hearing that their young author was a girl of great beauty — as indeed she was—he desired her to correspond with him. This Felicia's parents would not permit, and the girl gave her thoughts to better poetry, publishing the same year, 1808, poems of far higher level.

She read a great deal, and the wars of the period, in which two of her brothers were gallantly fighting, filled her young soul with patriotic ardour. Hence, when a dashing young Irish captain, named Hemans, came along to the quiet little Gwrych, what must Felicia Browne do but fall in love with him. He went off to the wars with her brothers, and to her he seemed, oh, such a hero! In 1812 Captain Hemans returned and married the beautiful young poet, who was then only nineteen years of age. They had five little sons, and then, in 1818, the captain went off to Italy, leaving his girl-bride with five baby boys to maintain. She never saw her husband again, and we do not know what became of him. But there she was, with these five small boys to maintain, and all their support had to come from her busy pen.

The brave young mother did not flinch from her task. She set herself to support her little family on the money that she earned by her poetry. She won a £50 prize for the best poem on the meeting of Bruce and Wallace, and three years later she gained a prize for the best poem on the subject of Dartmoor. She worked very hard, writing books and poems and articles for papers and magazines. Her fame became widespread throughout Great Britain and in America. Her fame in America was helped very largely, of course, by her poem on the landing in America of the courageous men who were

the first to leave England to worship God after their own consciences. We all know how that stirring poem begins :

The breaking waves dashed high
On a stern and rock-bound coast.

It is a fine, impressive poem, and multitudes of people in America used to assemble to sing it on the very spot at which the Pilgrim Fathers left their ship and first set foot on American soil. But Mrs. Hemans never saw the spot, and did not know what the scenery was like. One day an American admirer of the poem called to see her in her home near Windermere, and told her how highly the poem was regarded in America. She asked him to describe the exact scene of the landing. He had to confess that the coast is not "stern and rock-bound," but flat and free from danger. She was so grieved to think that her poem was guilty of describing the scene wrongly that she burst into tears of shame, and could not be comforted.

We have traced her to Lake Windermere. It was to a pretty little cottage overlooking the lake that she retired after leaving Liverpool, whither she had gone from Wales. She went there for peace and quiet, and to work amid the beauties of the neighbourhood to which Wordsworth had introduced her. But peace and quiet were not for her. Crowds of vulgar tourists found her out, and haunted her house, and, by begging for her autograph and other keepsakes, made her life a misery. It was here that she found that the strain of maintaining her family was breaking her health. She was too proud to tell her friends how hard and how killing the struggle was, and she worked on until her constitution was ruined. She knew that she was killing herself by overwork ; she knew also that she would never be able to give herself time and peace of mind to write the great poem upon which she desired that her fame in after years might rest. She went with her children to Dublin, to be near a beloved brother and his wife, but still the struggle for the childrens' welfare had to continue. She had many sorrows. Her husband had disappeared, her parents were dead, and death claimed several of her brothers and sisters, as she tells us in that mournful poem, "The Graves of a Household." But to the very end she toiled on, cheerfully, ungrudgingly, writing, in order to live, poems upon a variety of subjects, which the children of the world have since refused to let die. What child has not felt his heart beat and his eyes moisten as he has recited "The Child's First Grief "?

O call my brother back to me,
I cannot play alone !
The summer comes with flower and bee—
Where is my brother gone ?

A still more famous poem of hers is "Casabianca," known and recited throughout the English-speaking world. Two other poems, "The Better Land" and "The Diver," have been set to music and sung on every concert platform in the British Empire, and in every home which has a pianoforte.

She loved her home very dearly, the home which she strove so bravely to keep for her little ones, and we can tell that it is from her heart that there came the world-famous poem, "The Stately Homes of England." Another of her compositions which every child knows is, "He Never Smiled Again." It is safe to say that twenty or thirty of Felicia Hemans' poems will be found scattered through the best and most popular books of recitations of to-day. That is a great thing to be able to state of the work of a woman like Mrs. Hemans. For over seventy years the children of the world, and the children alone, have kept this good mother's memory green. She was only forty-one when she died. She caught cold while sitting in a Dublin garden, and she was so weak from her heavy work that she wasted away and died—May 16, 1835—in the very prime of life, while she was still capable of finer work than anything she had done.

THE HOME OF MRS. HEMANS BY LAKE WINDERMERE
From a photograph by G. P. Abraham

Felicia Hemans was buried in a pretty Dublin church, and her friends chose for her epitaph some beautiful lines which she herself had written among her poems. They are these:

Calm on the bosom of thy God,
Fair spirit! rest thee now!
Even while with us thy footsteps trod,
His seal was on thy brow.
Dust to its narrow house beneath!
Soul to its place on high!
They that have seen thy look in death,
No more may fear to die.

MRS. HEMANS

Seldom has a poet's epitaph been more fittingly written by that poet's own hand. Few people knew, during her life, how hard was the battle which the beautiful poet had to fight. For she was beautiful, though none of the painters or sculptors of her time seemed able to do her justice. People fancied her happy and care-free as some bright, singing bird. That was because she did not speak of her sorrows, and devoted all her energies to making others happy, instead of letting her mind dwell on her own misfortunes. When she went to Ireland she met a brother and sister-in-law whom she had not seen for five years. They were alarmed to see how disease and worry had left their marks upon her fair face. But the poetess blithely entertained them with gay and brilliant conversation, as though she were the happiest woman on earth. So she lived her days, happy in the knowledge that by her own suffering she had made the world a little brighter and better for the beloved sons for whom she toiled. Her memory will ever remain green with those who love the brave.

WILLIAM POSTEL, THE BOY WHO MEANT IT

A LITTLE French boy named William Postel lost his father and mother during the plague in France when he was only eight years of age. Left quite destitute, the brave child tramped to another village, and there earned his living as—what do you think?—as a schoolmaster! Yes, at eight years of age, William Postel supported himself by teaching others to read and write, and thus he lived for six years.

All the time he was teaching peasants their letters, this boy, who longed above everything else be to an author, was saving his money, so that he might go to Paris. He was fourteen years of age when he set out for the great capital of France. When he arrived in the midst of the crowded streets, he was so struck by the hard, cruel, and avaricious faces of the citizens that he felt inclined to run away and return to his happy, simple peasants in the country.

But he thought, "How people will laugh at me if I return!" and he continued his way in search of a lodging. He found a garret, and began to work hard at his books. Every day he acquired more learning, but every day his store of money dwindled. Very often he was hungry and cold. One morning, when his condition was really desperate, he woke with an idea in his head as to how he might earn money. Delighted with the idea, and feeling that now he was safe for at least another week, William jumped out of bed, and discovered with horror that a thief had visited his garret in the night, and stolen his clothes and the last of his money.

Overwhelmed by despair, his heart breaking with misery, the poor boy went to the window, determined to throw himself out. But as he went the thought came: "To be deserted by man is not to be deserted by God." He returned to his wretched bed, flung himself upon it, and burst into tears.

An illness seized him as he lay there, and he was taken to a hospital, where he lay helpless and miserable for two whole years. When he was well enough to walk, he left Paris, a beggar, put himself to work in the fields, saved money till he could buy himself a suit of decent clothes, and then returned to Paris to become a servitor in one of the colleges of the university. Here he gained universal knowledge, and the king, hearing how he had sought learning in spite of poverty and misfortune, became his patron, and Postel lived to be a celebrated writer, and a great Professor of Mathematics and Languages.

THE NEXT STORY OF MEN AND WOMEN IS ON PAGE 5493.

A PAIR OF MAGNETS LIFTING STEEL GIRDERS THAT WEIGH SEVERAL TONS

THE WONDERFUL UNSEEN WORKER

A MIGHTY POWER THAT A CHILD CAN CONTROL

CONTINUED FROM PAGE 5410.

Most of us know something about magnets. The earth itself is one vast magnet. The magnetic force of the earth, passing, age upon age, through certain ores, has magnetised these and made them into natural magnets, which we call the loadstone. All this we know already, and we know also that we ourselves can transfer this magnetic power of the loadstone to iron and steel, and make magnets of these. Steel which has been so treated remains magnetised, so we call it a permanent magnet.

A magnet of this type is one of our good servants which do much work for nothing. It is a permanent magnet, or magnetised needle, which makes the mariner's compass, to guide our brave sailors about the world of waters.

People of old time knew something of the wonders of the loadstone, the natural magnet, and attributed to it powers more magical than those which writers of stories bestow upon the fairies. Savages generally worship anything which they fear or cannot understand; people in England used to do almost as foolish things, and especially was this so in regard to the loadstone. The amusing thing is that we, in these happier days, have magnets which, while they cannot perform the marvellous feats supposed to be performed of old by the loadstone, do really much more wonderful things than worshippers of the loadstone ever dreamed of. Of course, it is the magnet known as the electro-magnet of which we are now speaking.

The secret of its immense usefulness is that one moment it is a magnet of enormous strength, and the next it is simply a piece of unmagnetised iron. The permanent magnet is too faithful; like the lichen on a rock, it must go on clinging to that which it holds. So that, although it will pick up a needle or a cannon-ball, it will not put either down, but will go on holding it until its magnetism grows faint, and the weight of its burden becomes at last too heavy. It is like a badly-trained dog which will run and pick up a thing for us, but will not give it to us when we desire to have the article.

The electro-magnet is a giant which a little child can control and direct. We all know how it is made. Big or little, and no matter what the pattern, the electro-magnet is always the same in principle. It is just a piece of sott iron wrapped about with wire. The wire is insulated, of

course—that is to say, it is all carefully wrapped in silk or gutta-percha, or some other substance, so that when the electric current is turned on the wire shall not let that current escape. There it is, then, a core of soft iron—soft iron because this does not retain its magnetism—wrapped about with wire. It is still and lifeless until we want it. Suppose now that we do want it. Let us ask a little girl to set the mysterious helper to work.

She touches a switch, and turns on a current of electricity, which comes to the magnet by way of wires. These wires are connected with a dynamo which is generating electricity, it may be miles away. The moment the little girl turns on the switch the current flies through the wire in which the soft iron is wrapped, and, hey, presto! our soft iron has become a magnet of tremendous power. The electric current magnetises the iron, and there is no natural magnet on earth so strong as that which our little girl places at our disposal.

What shall we do with it, now that we have got it? Here are tons and tons of pig-iron lying in a yard, waiting to be lifted into the railway trains which are to carry it from one end of the land to the other. It would take men days to do the work. We can do it as easily as we play a game. The magnet is fixed to a chain which is attached to a travelling crane. The magnet is lowered until it comes near the iron. Instantly these massive "pigs" of metal leap up as if they had awakened from sleep, and cling to the magnet as to their dearest friend.

The little girl gives a signal, and the engine-man makes the crane travel along its little overhead railway, carrying the magnet with its load of iron "pigs" with it. The burden is held over a car. The little girl touches the electric switch again, shuts off the current, and makes the magnet instantly cease to be a magnet, with the result that the pig-iron is no longer held up, but drops into its place in the car. Then the magnet travels back, is remagnetised, and brings back more pigs. In a very short time all the pig-iron is loaded into trucks, and the train is ready to start with its freight.

In the same place we may have other great weights of metal to be raised and carried. Our little girl can manage them all by her switch. The lifting power is fixed by the size and nature of the magnet used and the strength of the electric current supplied. Guns, cannon-balls, metal beams, heavy machinery, and all manner of things can be lifted in this way, carefully lowered, and then released.

The child whom we imagine as controlling the electro-magnet is performing before our eyes a miracle far more wonderful than any animated by our forefathers, who bowed down before the loadstone. She has before her common iron and common wire, dead, seemingly useless material. She touches the switch, and puts into that wire and iron a something which seems to render the iron alive, as with a mighty power.

Our magnet can lift and carry and place things in position for us, releasing them immediately we wish. But it can also act as a ready and rapid destroyer. When machinery has served its purpose, it has to be broken up, "scrapped," as we say, so that the metal may go to the furnace and be converted into something new and beautiful. But it is very hard work to break it up. Our young friend with her electro-magnet comes again to our aid. She touches the switch, turns on the current, and makes the magnet pick up a mass of metal. By the help of the crane she raises it to a height, then switches off the current, and lets the metal fall. Crash!—the machinery is broken into fragments ready for the furnace.

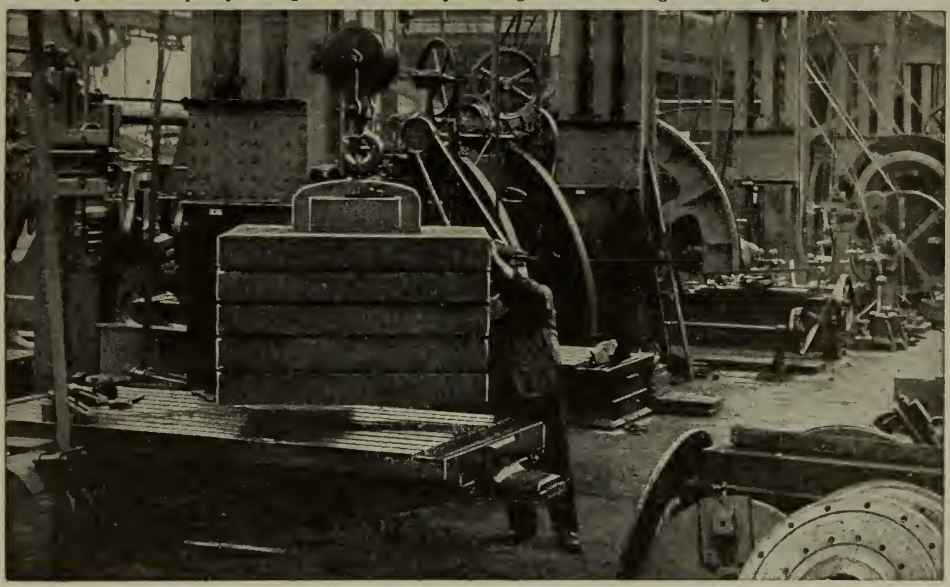
During the progress of this work an unfortunate man gets a sharp fragment of metal driven into his flesh. Our young friend comforts him, and leads him away to another magnet. She places the point of this at the entrance to the wound, and turns on a gentle current of electricity. The iron becomes magnetised, and in an instant we find that the piece of metal has been drawn out of the wound by the magnet.

Those are some of the ways in which a child can command the services of a magnet which, by her own act, she has made powerful through the aid of the wonderful unseen helper, electricity. There are a myriad other ways, too, in which the electro-magnet works for us. Every journey performed by electric train or trolley or motor, every message sent by telegraph or telephone, every electric bell that is rung, is worked by means of an electro-magnet, one of the most wonderful helpers that man has summoned to the service of the world.

MAGNETS THAT DO THE WORK OF FIFTY MEN

More and more of the lifting work in modern engineering works is done by powerful electro magnets. They are particularly useful for lifting long, thin plates of steel, which were formerly difficult to handle by means of ordinary chains and pulleys owing to their flexibility.

The most massive parts of machinery, many of which are very inconvenient to move because of their awkward shape, are easily raised by an electro-magnet and conveyed by a travelling crane to any place desired. The magnet effects a great saving in time and labour.

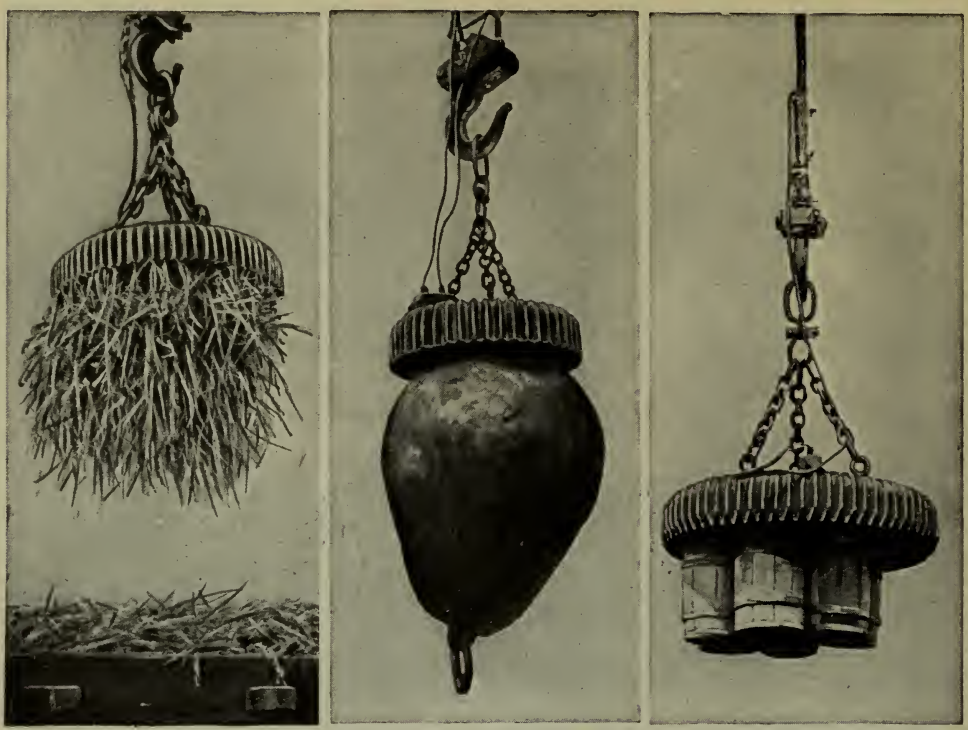


The power of the magnet can be so regulated by the strength of the electric current that a number of pieces of iron and steel can be raised at one time, as seen in this picture, and then dropped one by one as may be required.

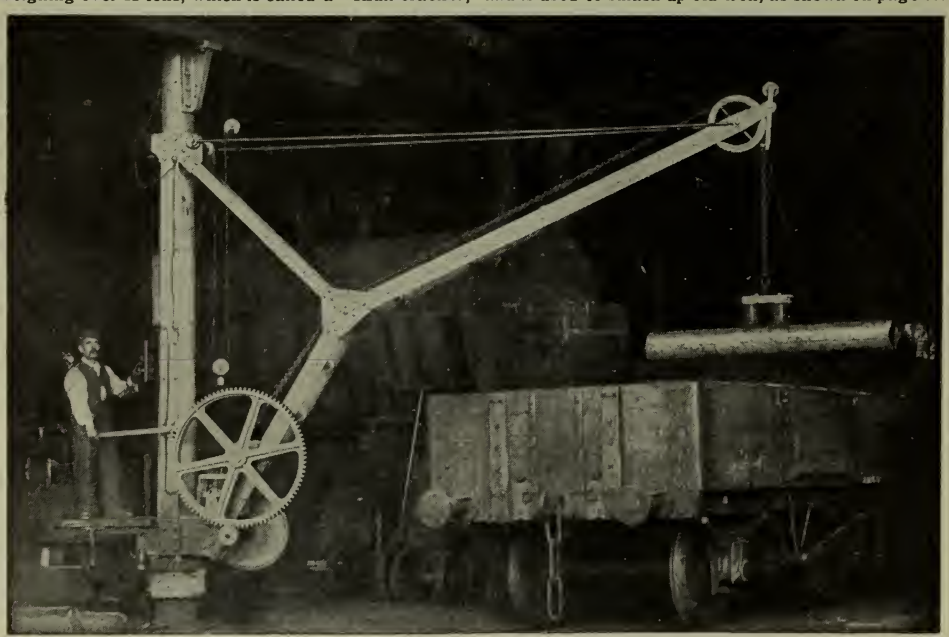
Girders had formerly to be raised separately, and there were many accidents among the men who handled them, but now a number of girders can be lifted at one time quite safely. Some magnets do the work of fifty men.

Great steel arches like those shown in the picture, weighing several tons each, were very difficult to move by means of slings and hooks, but now the electro-magnet handles them quite as easily as it does straight bars.

HOW THE GIANT MAGNETS ARE USED



Here are some of the ways in which the mighty electro-magnets, the most powerful of which will lift more than twenty tons, are used. In the left-hand picture a great mass of scrap steel is being raised, and in the right-hand picture six barrels of nails are supported by the magnet. In the centre the magnet is holding a huge mass of steel weighing over 22 tons, which is called a "skull-cracker," and is used to smash up old iron, as shown on page 637.



In this picture heavy iron cylinders are being loaded into railway trucks by means of an electro-magnet attached to a crane. As soon as the cylinder is hanging above the truck, the current is shut off, the magnetism ceases, and the iron falls. These magnets are very cheap considering the work they do; the most powerful cost only a few hundred dollars. They are particularly useful in handling newly-made pig-iron that is red hot.

THE BIGGEST MAGNET IN THE WORLD AT WORK

This picture shows how old machinery is smashed up with the help of the biggest lifting magnet in the world. A skull-cracker, weighing 22 tons, is raised by the magnet and is then allowed to fall with a crash on the old iron. The magnet is lowered, and once more raises the skull-cracker, which falls as soon as the current is taken off.

A comparatively small magnet will lift a ton of steel with three men standing upon it, as shown in the left-hand picture. On the right, ingots of iron are being moved by means of a great electro-magnet attached to a travelling crane.

Here we see a powerful magnet lifting several tons of pig-iron as though the iron was a feather. Such a magnet will move a thousand tons of iron in a day. This iron has cooled after being run into channels, as described on page 61. Magnets are used in shipbuilding for lifting the steel plates into position and holding them while they are riveted.

THE NEXT STORY OF FAMILIAR THINGS BEGINS ON PAGE 5537.

In Volume I you were shown two pictures of a ship which you were told was the largest in the world. The statement was true then, but here is a picture of a ship just constructed for the Hamburg-American Line which far surpasses it. It is 919 feet long, 98 feet broad, and can carry 50,000 tons. About 4250 passengers can be carried, and a crew of about a thousand is required to work the ship and take care of passengers, freight, etc. It can run twenty-three knots an hour. It is called "The Imperator," which means "The Emperor." The same company is building a ship 950 feet long. Such ships are really floating hotels.

WOLF CUBS BEING NURSED AT THE ZOO BY A FINE RETRIEVER DOG

THE LIFE OF YOUNG ANIMALS

CONTINUED FROM PAGE 5446

We are all pretenders — men, women, children, and animals. We dislike our work or our lessons only because they *are* work or lessons. The paid gardener wearies of gardening because he is paid to do it as work, but with what joy those of us whose duty lies in other directions take up spade and fork and hoe, and do our share towards making the garden beautiful! Gardening is play to us, because we are not compelled to do it. How we love a game at tennis or croquet on a broiling summer's day, yet how badly we should feel ourselves treated if we *had*, as a matter of duty, to play tennis or croquet in hot weather! The things which we do for fun are just as hard as those which we have to do as duty, but because we may please ourselves as to whether we do them or not, we enjoy them.

YOUNG WILD GOATS
One is feeding from a bottle

It would seem that Nature knows this weakness in our character just as well as we ourselves know it, for she teaches the humbler members of her family to act as we act. The babyhood of many animals is much like our own. Baby animals have to be taught by their parents as we have, but their training is given at play. Let us turn back for a moment to page 5324, and read again the story of the man caught by a tigress. We see that the great creature does not then and there eat him; she carries him to the jungle and calls her two babies to her, calms the fears which the sight of a man arouses, and does all she can to induce them to make a plaything of the unfortunate victim. It is a sort of kindergarten lesson for the baby tigers; they are taught a lesson in play. Now, that is the plan upon which many animals are taught when young. The very things which it will be necessary for them to do in after life in order to live, they learn from their parents in games. The wise parents are serious enough, no doubt, in their intentions; but the little ones cannot be serious, they take their lessons as if they were part of some game. They are only in real earnest when danger threatens, and they run to their parents for protection.

Grave naturalists who have studied wild life in scenes far removed from the paths of men have asked themselves the question, "Are animals happy?" and have come to the conclusion that they cannot be. Fear of

starvation and fear of death by flesh-eating animals must, they think, be ever present in the minds of vegetable-feeding animals and make their lives miserable. We may comfort ourselves with the belief, however, that this unhappiness, even if it really exists in the adult animals, does not affect the young ones. To them life must seem happy enough. They are taught to avoid dangers, but their lessons are taken in their play-time, and the art of concealing themselves cannot seem a much more serious matter to them than is a game of hide-and-seek to us. Nearly all animals are quite helpless when born. The fierce creatures which, when they grow up, destroy other animals, are as feeble as newly hatched pigeons, and need as much attention as one of our own babies. As soon as the teeth of young lions or tigers begin to grow and they are able to bite, their parents bring them the bodies of animals upon which they begin their task of feeding themselves.

YOUNG TIGER CUBS PLAYING

They are taught to " worry " the flesh ; they gambol and play with it, and bite it in fun, as a puppy will bite the slippered toe stuck out by ourselves to tease him. They are encouraged to do things which sharpen their teeth and claws and make them bodily strong. Wolves and foxes are taught to hunt.

There are many stories of children having been carried off and brought up by wolves. Nobody can say whether these stories are true, but as so many such stories exist, men have tried to account for them, and they think that, if such a thing ever has happened, it has come about in this way. A mother or father wolf, seeing a baby child left unguarded, has snatched it up and carried it home to its little ones. The mother wolf has not been hungry at the time, and the little ones required only milk for their meal, which their mother supplied. The child has therefore dropped down among the baby wolves, and, unconscious of its danger, has struggled to the side of the mother wolf and managed to get itself fed by her in the same way as the baby wolves. Then, food being plentiful in the neighbourhood, there has been no need for the mother or father wolf to eat the child. The latter has become the plaything of the baby wolves, who have come to look upon it as one of themselves, while the mother wolf grows used to regarding it in the same way. In that manner the child grows up as much like a wolf as a child can be. Lord Wolseley says that when he was in India he heard many stories of children being stolen and reared by wolves, and he believes that it is a fact that such a thing has happened. If so, he says, then the legend of Romulus and Remus, the founders of Rome, having been nursed by a wolf may, after all, be true.

Italians do not doubt the story, and in Rome a caged wolf is always kept in state to commemorate the event. The editor of this book was very much scared when, late one night, as he wandered through Rome, he stumbled by accident on the lair of the wolf kept by the Romans to-day as the descendant of the wolf which is said to have nurtured the founders of the Eternal City. The young of flesh-eating animals are taught, when at play, to practise the arts which may one day be necessary to enable them to grapple with their prey. Notice the frolics of two kittens. They crouch, and creep, and spring upon one another, and ply teeth and claws in their happy sport. But picture those same kittens a few months older ; fancy the bites and scratches they now give as being given in earnest, and we see that here in play are the very movements which, in time to come, they will give in earnest, when some living animal has to be captured for food. The animals which do not eat others are taught

MOTHER AND BABY KANGAROO

when young to avoid other animals and the dangers which may spring from them.

Let us watch a mare and her foal in a field. The staid and sedate adult animal has no desire to go frisking about the pasture, but suddenly, with a low whinny to her baby, she will fling her head high, kick up her heels, and gallop away, rearing and plunging and swerving as she goes with her baby bounding like a thing of india-rubber after her. It is an old instinct which is driving the mother to act in this way. She comes of a species which long ago was hunted by wild men and by wild animals.

A JAPANESE APE AND A BABY

In those days the life of a horse depended upon its power to gallop swiftly and to start aside from hidden danger. And that is what the mother is teaching the foal to do to-day as they both course so gaily and joyously over the meadow.

As we all know, the pace of a coach depends upon the speed of the slowest horse in the team. The same rule applies to the speed at which wild animals, moving in troops or herds, can travel. The animals which are full grown may be able to gallop like the wind, but the young ones cannot. Therefore, they must have some means of escaping animals who prey upon them, or their species would be exterminated. So the fawn is taught a really clever ruse. Should an enemy approach, the fawn darts off like a flash to a point seventy or eighty yards or more away, and there drops down, and lies close to the ground, with its long neck outstretched. The mother, seeing the young one hiding, then bursts away in the opposite direction. She will even limp, pretending to be lame, so that the animal which is seeking food will follow her in the expectation of easily overtaking her.

A MULE, WITH A DWARF DONKEY AND HER BABY

But once she has lured the enemy well away from her little one, she bounds swiftly beyond its reach, and then, all in good time, when the danger is past, she can return and find her fawn. The English hares are taught to do something of the same sort. At the least sign of danger they crouch flat upon the ground, and so much is their fur like the ground upon which they lie that an eye much better than that of a townsman is required to detect them. A young rabbit learns to sprawl flat when threatened, and the funny thing is that tame rabbits will do exactly the same thing, though their colour may be of no use for hiding them where they lie. It is easy for animals like these to crouch and hide, but it is a different matter for creatures like kangaroos and wallabies. The young of the kangaroo remind us of the young crayfish or the young lobster in the manner in which they flee to their mother for protection in the hour of danger. The mother lobster or mother crayfish, seeing danger coming, gives a warning shake with her claws, and the little ones scuttle under her body, and hide beneath her, like chicks called by the alarm-cluck of their mother. The young kangaroo also has to depend upon the help of its mother for security. But the kangaroo mother is not content merely to hide her baby, as the lobsters and crayfish hide theirs. She receives her little one into her pouch, and then away she bounds, carrying the little one with her. The baby kangaroo pops his perky little head over the edge of his soft and furry cradle, and smiles, secure from danger, if baby kangaroos do smile. Kangaroos are not the only young animals which, when young, enjoy the privilege of being carried without having paid their fares. All the babies of the animals which we call marsupials enjoy the same good fortune. The marsupials are those animals which have this special pouch in which to carry their young about when they are growing up.

But often enough the mother marsupial, if she be, say, a crab-eating opossum, must feel like the old lady who lived in a shoe, for she, too, has so many children that she cannot tell what to do to carry them all in the manner in which the mother kangaroo carries her family. Well, the opossum possesses something which the kangaroo has not. It has what, for the moment, we will venture to call a tree-climbing tail. The kangaroo has a tail of another kind, which acts as a prop when the animal sits up; and we have only to watch a couple of baby kangaroos at play to see another purpose which this tail can be made to serve.

While sitting up, they suddenly rise upon the thick part of the tail, and strike out in play at each other with their hind feet. It is well that it is in play. When they grow older they may have to use the same trick in real earnest, but then they will strike out with their powerfully armed hind claws, not at each other, but at man or dog, and tear either very seriously. And the little tricks which they play with their fore paws come in time to serve serious ends. A big kangaroo chased into water by dogs will calmly seize an enemy and hold it under the water until it is drowned. To such ends do the tricks of the baby kangaroos lead.

FIVE EWES AND THEIR ELEVEN LAMBS

Now the tail of the opossum does not help it in this way. But it is like the tail of the American monkey—a sort of fifth hand or foot. As the opossum climbs a tree, this tail clings tightly round a branch and steadies the animal. The little opossums have little tails, and those who cannot ride in the mother's pouch, ride on her back, their tiny tails coiled tightly round hers. Thus they cling, as we ourselves cling by our hands to the straps in overcrowded trains and trams. The baby opossums are Nature's "strap-hangers."

Having mentioned the use which the New World monkeys make of their tails, we must remember how devotedly the mother monkey carries her baby about when it is not yet old enough to run quickly. Now and again she will support the little one with one arm, but she soon teaches it to cling tightly to the hair with which her body is covered, so that when she flees from peril she may have all four limbs at liberty. The baboon mothers and fathers encourage their little ones to play and become active, but when the little ones quarrel, as they often do, father baboon will step up, give the quarrelsome ones a good spank, and retire with all the satisfaction of a parent who has discharged a painful but necessary duty.

Some of the great apes—which are said to be not very cleanly in their habits—are a good deal cleaner than they are pictured, for they carry their babies down to stream or river, and teach them the blessed art of washing themselves. The little apes at first do not like it, but if they knew natural history as well as children know it, they might say: "You need not wonder that we do not like the water when even little seals and other water animals do not." For that is the fact. The baby seals are very unwilling to enter the water at first, and their patient, affectionate mothers have to persuade them to take to the sea in which they are afterwards to make their home. Young otters, the finest of all swimmers in this country, have to be taught to trust themselves in the river, just as the young swallows and the young eagles have to be taught to fly.

It is hardly correct to say that youthful beavers have to be taught to do their work, but, at any rate, we do know that they begin by very easy stages, and that not until the summer, during which they have been romping in the woods near the water, has nearly gone. They are then brought back from the woods to the river home, and while mother and father are hard at work, laying up a winter store of food, and making the home snug and safe for the cold days, the little ones play at being busy, nibbling twigs, carrying them to and fro, making glorious mud-pies, and patting bits of them on to the dam, or the family home. They doubtless think it all fine fun, but their play is the real preparation for the work of their lives.

A CONGO MARSH BUCK AND YOUNG
The baby is four weeks old

A MOTHER ZEBRA AND FOAL
The foal is one week old

We have all seen lambs at play in the fields, but it is finest to see them on the hills, where they skip and leap about the rocks just like bouncing balls. Perhaps it does not occur to us that in this play, which their mother quietly watches, they are practising for the day when, in deadly struggle, they may have to contend with other sheep. Calves are never very playful, but they have to learn their lessons, whether they do it in fun or in earnest, for there are deadly weeds in our fields which they must avoid. A young tiger would quickly discharge from its throat any poisonous substance which it might have swallowed; but the calf has a series of four stomachs, and cannot so easily rid itself of poison, hence it has to be very careful, or its mother has to be very careful for it. Wild animals are less likely to be poisoned than domestic animals, but they have their dangers, and the little camel which we see in the picture, though it is very young, would, if left out in the wilds, probably manage to steer clear of poisonous weeds. That would depend, however, upon whether it were in the place to which its parents belonged in their free state. For we know that camels taken to a strange part of Africa died in great numbers, from eating weeds which the native camels all avoided. The chief concern of the young rhinoceros is to avoid getting drowned in the water to which its parents take it to drink, or from being smothered in the mud in which they love to roll. It must learn also to lead the way by safe paths to and from the home in the reeds or in the depths of the jungle when feeding and drinking and bathing are over—for in many instances it is the baby rhinoceros which heads the march on these trips. One

YOUNG HIPPOPOTAMUSES 20 MONTHS OLD

A BACTRIAN CAMEL AND ITS BABY
The young camel is five weeks old

A YOUNG ELEPHANT LEARNING TO BEG
The elephant is two years old

other thing it must learn, too—to tell by the power of its nose what animals or men are in the neighbourhood. And it does it; it can tell when a man is hundreds of yards away—not by sound, but simply by smelling him. The young hippopotamus has to go through much the same sort of training, but he has to be much more expert in the water, for is he not the young "river horse"? Both he and the rhinoceros display the warmest affection for the mother, and if the latter be killed, the little one will not leave her, but remains to mourn until it is either shot or dragged away from the spot by ropes.

A PENGUIN AND BABY IN THEIR NEST
The baby is ten days old

The most interesting of all the big babies is the baby elephant, which is as affectionate as a baby hippopotamus, but cleverer. If men catch a young elephant, they can train it to do things which seem almost human; but the mother elephant is perhaps an even better trainer of her baby. Take the case of a baby elephant which had sustained a bad injury to its head. It was like a cross child with a sore finger; could not bear to be touched, and ran away in fury if anybody tried to cure it. This could not go on, for the wound was a bad one, and the young elephant's life was in danger, so the keeper talked to the baby elephant's mother, and this clever creature understood what he wanted.

She quietly seized her baby with her trunk, and forced it down upon its knees, holding it there while a doctor cleaned and dressed the wound; and this was repeated every day until the little one was quite cured. Baby giraffes and zebras are not educated in this way. They are taught to avoid man just as they are taught to avoid the lion, the hyena, and the jackal. But, if they do happen to be caught, they are treated with great kindness, and live happily in our zoo or in similar gardens elsewhere. There are no lions or hyenas to kill them there. They are much too well looked after for that. The keepers in the zoological gardens, who look so very stern and solemn, and who sometimes frighten tender-hearted children by telling them not to give monkey-nuts to tigers and bath-buns to the seals, are on certain occasions—when no one is looking—as gentle as women to their charges.

A GIRAFFE AND HER BABY
The baby is ten months old

You ought to see them when a baby is born in a zoo—not a little pink, fat, ten-toed, fluffy-headed human baby, but a baby with claws and whiskers, or a baby with a trunk of a nose, or a baby with hairy body and a great, long, hairy tail. A new baby in a zoo turns all the stern-faced keepers into beaming nurses. The creases come out of their faces, the frown disappears from their brows, their cheeks expand, their lips smile, their eyes melt with pleasure, they need only cap and apron and a sewing-box to look exactly like your own nurse. The angel in a zoo is the last-born baby. It turns the place into heaven. The keepers cluck to it, cuddle it, play with it, feed it, and comfort it when it is cutting its teeth. If one of these babies gets ill, there is a regular crisis of grief among the keepers. And it is not only the keepers and the kind, wise superintendent who love these city-born babies of the jungle and desert, and who do everything in their power, night and day, to keep the little things fat and warm.

A YOUNG POLAR BEAR AT THE LONDON ZOO
The bear is four months old

THE NEXT STORY OF NATURE IS ON PAGE 5567.

DO THE STARS REALLY TWINKLE?

CONTINUED FROM PAGE 5385.

THE answer to this question is : No.

A source of light may really twinkle; the light may grow less and more intense alternately because less and more light is really being produced. But the stars are suns, and they do not really twinkle. Something must happen to the light from the star before it reaches our eyes which makes the star appear as if it twinkled. The star itself sends steady, equal rays of light in all directions, and there is no reason to believe that anything happens to these rays until they reach our air.

But when they encounter the air, various things may happen ; and one is that some of the rays may get slightly delayed as compared with others, and thus there is made possible the remarkable thing called interference, which we notice in the case of sound-waves and water-waves. It is possible, as we see when we throw two stones, one after the other, into a pond, to have two sets of waves going in such a way that they will either cancel each other or double each other. This interference in the case of light-waves causes what corresponds to a beat in sound-waves. It is probable that the twinkling of stars is due to this fact of interference.

WHY DOES BOILING MAKE POTATOES SOFT AND EGGS HARD?

It seems curious at first sight that the same process should have such different results in these two cases ; but the key to the puzzle lies in the very different natures of an egg and a potato. A potato is mainly a store of starch for the future needs of the plant, and the bulk of it consists of grains of starch covered with a hard coat of almost woody substance. It is these that give the potato its firmness. When the potato is boiled, water is drawn into the starch-grains through the hard, stiff coat, which is not elastic, and cannot expand when its contents are increased.

Water cannot be compressed, and therefore the grain is bound to burst. The bursting of all the hard envelopes of the starch-grains, and the increase of water in the potato as a whole, are the causes of the potato's softness when it has been boiled.

Though there is much more water in an egg than most people think, a large part of it consists of a peculiar chemical substance, meant to be a supply of food material to the growing chick, and called egg-albumen. It belongs to the great class of the proteins. This word means the same as proteids, which is better known, but is now no longer used by chemists. Proteids, or proteins, are the most important of all animal and vegetable compounds.

Perhaps the most especial fact about the proteins is that they are made up of molecules which are enormous, for molecules, and probably this accounts for the fact that they are very easily turned solid by various means. This is called coagulation ; and every protein has its coagulation-point of temperature. The albumen,

or white, of an egg is an example of this, and the egg turns hard because this protein clots, or coagulates.

We must not suppose that, like the turning solid of water when it is cooled, this is merely a question of temperature, for a clotted protein does not turn liquid again when it cools, and it is quite easy to clot a protein in many ways without heating it at all. Clotted protein is naturally very much less easy to digest than liquid protein.

HOW FAR DOES SPACE EXTEND?

We know that though the earth never ceases to fly in space, yet its path is a closed one, since it moves in what is very nearly a circle, and not in a straight and endless line. As far as that movement is concerned, the earth does not need so much space, after all, for its flight. But we find, when we study the sun, that he also is moving, and moving onward; not, so far as we can tell, in a closed path, or orbit, at all. And so we are bound to ask how far does space reach, for we ourselves must be travelling with the sun wherever he goes.

The only possible answer, fearful though it may sound, is that space goes on for ever and ever in all directions. The Latin word for infinite simply means not ended, or unbounded, and what we mean when we speak of the infinite universe is that space is without end in all directions. Yet we are not to allow this tremendous idea to make us shake, which is what the word tremendous means. For greater—far greater—than infinite space is the wonderful mind of man, which is able to survey and think of such a thing.

WHAT IS SPACE MADE OF?

There is no other possible answer to this question than that space is made of—space! The stuff that makes things does not make space, but it exists in space. Space is no kind of matter, however transparent and fine, but all matter and the things that matter makes exist in space. We might as well ask the question, What is time made of? as, What is space made of? And there is nothing but the corresponding answer to return to both.

We know that all sorts of wonderful things happen through space. Light flies through it for immense distances, and the power of gravitation acts through it. At first we can find nothing at all to carry these powers, and yet our minds assure us that there must be something there, or gravitation could not act and light could not travel. Thus we come to another interesting question—a question which really can be asked and must certainly be answered, What fills space?

Certainly something fills space, and we may call it the ether. We say that gravitation acts through this ether, that the ether conveys light, radiant heat, and electricity, and that it exists absolutely everywhere. We believe that infinite space is filled with this ether—which, indeed, it is now the fashion to call the "ether of space." But at present we can scarcely return any more definite answers as to what this ether is, though we know so much of what it does.

IS IT POSSIBLE TO KNOW THE FUTURE?

In many ways we *do* know the future, and are always learning to foretell more and more of it. There was seen not long ago in the sky a great comet which has not been beheld by the eye of man for three-quarters of a century, but the return of which was predicted correctly to within a few weeks or days. Again, we know that, on the average, men who eat and drink too much will die sooner than those who do not. We know that if we buy something at a shop without paying for it, a bill will be sent in. We know a great deal of the future, therefore, because the future, like everything else, has causes, and where we know the causes we can foretell what the effects will be. Science, it has been said, is foreseeing, and that assertion is yearly coming to be more justified.

Though we do not know that we shall die during the following year, we know pretty closely how many persons will die, how many babies will be born, how many men will go bankrupt, and so on, in the following year. We can apply the law of averages, and that helps us to foretell the future with fair accuracy.

There is much we cannot know, much of detail about our own lives which no one can predict, and it is indeed well to know that our own wills and courage and faith can *make* the future, and that it is not *fatally* decided for us in every particular by some power against which we are helpless. Too many people have believed this lie, and have failed in consequence to live the highest kind of lives.

WHAT IS FATALISM?

In many times and in many parts of the world men have preached that everything which will happen will do so whatever we try to do, or try not to do. Men

have rightly seen that great facts in the world go on whether we will or not, that autumn follows summer, that we all must die, and so on. And so they speak of something which they call Fate. But too often they have gone on to say that our feeling of power and of will is a mistake and unreal, and that, though we think we decide things, everything we do is really done to us, and we are in the grip of Fate just as much as lifeless things and animals and plants are. This heart-breaking doctrine is called Fatalism.

WHY IS IT BAD TO BELIEVE IN FATALISM?

Anyone can readily guess what are the consequences of fatalism. Of course, it means that, in places where it is believed, men fold their hands and accept whatever comes without a protest. If there is drought, they sit still and suffer instead of going in search of water. If there is a pestilence, or a wicked king on the throne, or if the crops do not ripen, they just accept these things and say: "This is Fate, and what is the good of striving against it?"

But the truth is that, though everything is due to causes and must follow those causes, the will of man is one of the causes in the world; it is, indeed, the greatest of them all in the effects it can produce. And so fatalism is false, and the true doctrine to believe is that God helps those who help themselves.

ARE WARS NECESSARY?

No real thinker believes that war, as we now understand it, is necessary. But the question is much more difficult if we ask it regarding the past. Everyone will now agree that certain kinds of wars were never necessary and need not have happened. Among them would be all wars undertaken merely for the sake of a single person, whether for the sake of a king and his royal line, or for the sake of a great conqueror like Napoleon.

We shall all agree, also, that the wars of religion were not necessary. It could not be to the real service of religion that men should kill each other, and, of course, in all such cases the real cause was the ambition and lust of power of individual persons, kings and others, with whose "immeasurable, unimaginable guilt, heaped up from hell to heaven," as John Ruskin says, history is full.

But there were also wars made by more civilised peoples, whose numbers were rapidly increasing, upon savages. All civilisation has spread in this way, and those among whom it spread have always fought against the invaders, as the Gauls and the Britons did against Julius Cæsar. It seems that, as the world is made, such wars were necessary in the past, just as death is necessary.

The case is quite different now, when the whole of the habitable world, and practically all the uninhabitable world too, have already been brought under the control of the so-called civilised nations; and so, in the future, these wars of aggression also will no longer be necessary.

IS THERE ANY GOOD IN WAR?

Shallow people have often declared that there is great good in war, however horrible fighting may appear at first sight. These people have the excuse that certainly a nation begins to go downhill when it has nothing to fear, and begins to get luxurious. But it is horribly untrue to say that there is now any good in war. Probably there was some good in it ages ago, when every man was a fighter, and when personal courage and powers of endurance made for success. Then, at any rate, the cowardly and the weaklings would disappear.

But nowadays a nation sends the pick of its manhood into battle, where vast numbers of them die by the enemy's bullets and shell, and still larger numbers by disease. But the idle and puny and ill stay at home and are not killed.

This can only mean that those who are not fit to be soldiers stay at home and become the fathers of the future. It has been clearly proved that nowadays any nation which undertakes a great war suffers terribly, whether it wins or loses, by the awful destruction of so many of the finest of its strong young men. No matter how much gold the conquered have to pay, the conqueror can never be compensated for this loss of the nation's life.

Then there are the consequences of the great cost of a war: the upkeep of so many men who are producing nothing, the interference with commerce, the destruction of buildings, and the evil passions called forth.

As for the courage and self-sacrifice often found in war, they are always called forth from mankind whenever they are required; but no one therefore says that fires and mine accidents and shipwrecks, and other things of that kind which give opportunities for heroism, are good things in themselves.

CAN A PIECE OF IRON GET TIRED?

Certainly it can, and so can a piece of steel, and, indeed, metals in general, as well as many other things that are not really alive. When the iron is "tired" it will not behave in the same way as when it is in its usual state. After a "rest" it will come right again.

People who use razors often notice that if a razor is used every day it will not shave so well. It gets tired, but after a rest it will take as keen an edge as ever. This is a very interesting question which has lately been studied very carefully, and the special interest of it is more even than we can see for ourselves at first; for if ordinary matter, not alive, can get "tired," perhaps part of *our* tiredness may be due to the same thing happening in the matter of which our bodies are made. Not much is known about fatigue, and it is very important to discover that there is a change produced in all matter by strain.

CAN WE THINK ABOUT PEOPLE WITHOUT SEEING THEM IN OUR MIND?

Certainly we can, for we remember our friends by many senses, and not by our eyes only. In most people the mind's eye, as we call it, is very powerful, and they remember faces clearly, and think of their friends as something *seen*. But in other cases people have their mind's ear, as we might equally well call it, very well developed, and they remember voices clearly, and will often think of their friends or their enemies as something *heard*.

Exactly the same is true of other senses, such as the sense of touch. When we are very fond of a person, our thought of him or her may mean recalling the face and the voice and the touch of the hand all together. The artist will have the one tendency strongest, the musician another. Some people think of their friends under their names; but in our minds we may see their eyes, or mouth, or clothes.

WHY DOES ELASTIC STRETCH?

We know that many kinds of material made by living beings have properties which are not found anywhere else. The secret must lie in the way in which the little molecules, as they are called, that make up the elastic are connected. All we know as yet is that, for molecules, they are very large and complicated, and are probably linked together in a very complicated way. We must distinguish between the stretching of a thing like elastic, which flies back, and the stretching of, say, putty, which never flies back.

CAN METALS BE POISONED?

The answer to this question is yes. That is to say, we find that metals which do certain things when an electric current is passed through them, or when they are heated, or when a beam of light plays upon them, and in other such cases, can no longer do what we expect if they have first been treated with some of those very chemical compounds, such as prussic acid, which poison living creatures.

When a person is under the influence of chloroform, certain of his nerve-cells are poisoned, and do not work, and then the person will not react, as we say, to pain or to light and other stimulants. In the same way, not only a strip of turnip or carrot, but a strip of metal may be poisoned and fail to react. The rule seems to be that anything which acts in a particular way on a strip of muscle will act in a similar way on a strip of vegetable tissue or on a strip of metal.

CAN A BLIND MAN'S TOUCH TAKE THE PLACE OF HIS SIGHT?

The answer to this is partly yes and partly no. Certainly the sense of touch can never develop in any blind man so as really to make up for his loss of sight, and no one supposes that it can. But it is true that a blind man, because he must make the most of the senses he has, educates his sense of touch to a high degree, and makes the most of it. People who can see do not do so, any more than they develop the sense of smell to the utmost. When we can judge of a thing positively by looking at it, we do not trouble to try our fingers on it.

But it is quite untrue that the sense of touch itself is more delicate and acute in blind people. The point has lately been studied, and it is found that touch is less acute in blind people, though it may be better educated for special purposes. The brain being a whole, the whole of it must suffer when part is defective.

THE NEXT BOOK OF WONDER IS ON PAGE 5573.

ON SIR PHILIP SIDNEY

SIR PHILIP SIDNEY, who was born in 1554 and died in 1586, from the result of a wound received while fighting in the Netherlands, was one of the most beautiful characters of his time. Although we know him as one of the finest poets of the Elizabethan period, none of his poems was printed during his lifetime, and the fame which he enjoyed in his own day was largely due to his personal character. Whenever we wish to think of a true hero and a Christian gentleman, the name of Sir Philip Sidney is the one that comes most readily to mind. Sir Fulke-Greville was a fellow-poet and comrade of his. He wrote the life of his friend, which was printed in 1652. He was also the author of this poem, in which he so beautifully celebrates the virtues of Sidney.

SILENCE augmenteth grief, writing increaseth rage,
Stal'd are my thoughts, which loved and lost, the wonder of our age;
Yet quickened now with fire, though dead with frost ere now,
Enraged I write I know not what; dead quick, I know not how.

Hard-hearted minds relent, and Rigour's tears abound,
And Envy strangely rues his end, in whom no fault she found;
Knowledge his light hath lost, Valour hath slain her knight:
Sidney is dead, dead is my friend, dead is the world's delight.

Place pensive wails his fall, whose presence was her pride;
Time crieth out, my ebb is come, his life was my springtide;
Fame mourns in that she lost, the ground of her reports,
Each living wight laments his lack, and all in sundry sorts.

He was — woe worth that word — to each well-thinking mind,
A spotless friend, a matchless man, whose virtue ever shined,
Declaring in his thoughts, his life, and that he writ,
Highest conceits, longest foresights, and deepest works of wit.

He only like himself, was second unto none,
Where death — though life — we rue, and wrong, and all in vain do moan,
Their loss, not him wail they, that fill the world with cries,
Death slew not him, but he made death his ladder to the skies.

Farewell to you, my hopes, my wonted waking dreams!
Farewell sometime enjoyed joy, eclipsèd are thy beams!
Farewell, self-pleasing thoughts, which quietness brings forth,
And farewell friendship's sacred league uniting minds of worth.

And farewell, merry heart, the gift of guiltless minds,
And all sports, which for live's restore, variety assigns,
Let all that sweet is, void! In me no mirth may dwell,
Philip the cause of all this woe, my life's content, farewell!

Nor rime, the scourge of rage, which art no kin to skill,
And endless grief which deads my life, yet knows not how to kill,
Go seek that hapless tomb, which if ye hap to find,
Salute the stones, that keep the lines, that held so good a mind.

Now sink of sorrow I, who live, the more the wrong,
Who wishing death, whom death denies, whose thread is all too long,
Who tied to wretched life, who look for no relief,
Must spend my ever-dying days in never-ending grief.

Heart's ease and only I, like parallels run on,
Whose equal length, keep equal breadth, and never meet in one,
Yet for not wronging him, my thoughts, my sorrows cell,
Shall not run out, though leak they will, for liking him so well.

THE CHILD'S WISH IN JUNE

If the author of these verses is not known to fame and if they are not of any real poetical merit, they at least convey a very pleasing sense of that delightfully lazy month of June. All work and no play, as we are told, makes Jack a dull boy, and even Nature seems to take a rest in June. Midsummer is a good time for us all to do a little idling, to enjoy the bright sunshine, the sweet bird-song, and the lazy drone of the bees.

MOTHER, mother, the winds are at play;
Prithee, let me be idle to-day!
Look, dear mother, the flowers all lie
Languidly under the bright blue sky.

See how slowly the streamlet glides;
Look how the violet roguishly hides;
Even the butterfly rests on the rose,
And scarcely sips the sweets as he goes.

Poor Tray is asleep in the noonday sun,
And the flies go about him one by one;
And pussy sits near with a sleepy grace,
Without ever thinking of washing her face.

There flies a bird to a neighbouring tree,
And very lazily flieth he;
And he sits and twitters a gentle note,
That scarcely ruffles his little throat.

You bid me be busy; but, mother, hear
How the humdrum grasshopper soundeth near;
And the soft west wind is so light in its play
It scarcely moves a leaf on the spray.

I wish, oh, I wish I were yonder cloud,
That sails about its misty shroud;
Books and work I no more should see,
But I'd come and float, dear mother, o'er thee!

THE DUST

In these verses written by Gertrude Hall, we have a striking reminder that all earthly things return to dust, for it is indeed true that the dust which Betty has to brush away is but the powdered remains of many things which once were beautiful.

IT settles softly on your things,
Impalpable, fine, light, dull, grey;
Her dingy dust-clout Betty brings,
And, singing, brushes it away.

And it's a queen's robe, once so proud,
And it's the moths fed in its fold;
It's leaves, and roses, and the shroud
Wherein an ancient saint was rolled.

And it is Beauty's golden hair,
And it is Genius's crown of bay,
And it is lips once warm and fair
That kissed in some forgotten May.

A HUNDRED YEARS TO COME

The poet who sings in the following verses strikes a note of sadness, and seems oppressed when he contemplates the passing away of everything that is alive and gay at the present time. It is true that in one hundred years few living creatures of to-day will still exist, but the mighty stream of life will still flow on, and we must give place to others, as others have given place to us, so that the prospect is not one of sadness, but rather one to spur us to our best endeavour while our days shall endure. The author of the poem is C. F. Brown.

WHERE, where will be the birds that sing,
A hundred years to come?
The flowers that now in beauty spring,
A hundred years to come?
The rosy lips, the lofty brow,
The heart that beats so gayly now,
Oh, where will be love's beaming eye,
Joy's pleasant smile, and sorrow's sigh,
A hundred years to come?

Who'll press for gold this crowded street,
A hundred years to come?
Who'll tread yon church with willing feet,
A hundred years to come?
Pale, trembling age, and fiery youth,
And childhood with its brow of truth;
The rich and poor, on land and sea,
Where will the mighty millions be,
A hundred years to come?

We all within our graves shall sleep,
A hundred years to come;
No living soul for us will weep,
A hundred years to come,
But other men our lands shall till,
And others, then, these streets will fill,
And other birds will sing as gay,
And bright the sun shine as to-day,
A hundred years to come.

BETTER THINGS

Several of George Macdonald's poems have already appeared in our pages, and we always find him praising the virtue of humility, the delight in simple things. In the following verses he celebrates those "better things" which we are apt foolishly to despise in our search after the vanities of life.

BETTER to smell the violet cool, than sip the glowing wine;
Better to hark a hidden brook, than watch a diamond shine.

Better the love of a gentle heart, than beauty's favour proud;
Better the rose's living seed, than roses in a crowd.

Better to love in loneliness, than to bask in love all day;
Better the fountain in the heart, than the fountain by the way.

Better be fed by a mother's hand, than eat alone at will;
Better to trust in God, than say: "My goods my storehouse fill."

Better to be a little wise, than in knowledge to abound;
Better to teach a child, than toil to fill perfection's round.

Better to sit at a master's feet, than thrill a listening State;
Better suspect that thou art proud, than be sure that thou art great.

Better to walk the real unseen, than watch the hour's event;
Better the "Well done!" at the last, than the air with shouting rent.

Better to have a quiet grief, than a hurrying delight;
Better the twilight of the dawn, than the noonday burning bright.

Better a death when work is done, than earth's most favoured birth;
Better a child in God's great house, than the king of all the earth.

LOVE'S REASONINGS

Charles Mackay, an English poet of some note in the last century, sings here in very simple strains the praise of bird-music, that unfailing source of inspiration to the poets.

What is the meaning of thy song,
That rings so clear and loud,
Thou nightingale, amid the copse—
Thou lark above the cloud?
What says thy song, thou joyous thrush,
Up in the walnut-tree?
"I love my love, because I know
My love loves me."

What is the meaning of thy thought,
O maiden fair and young?
There is such pleasure in thine eyes,
Such music on thy tongue;
There is such glory in thy face,
What can the meaning be?
"I love my love, because I know
My love loves me."

Oh, happy words! at Beauty's feet
We sing them ere our prime,
And when the early summers pass,
And care comes on with time,
Still be it ours, in care's despite,
To join the chorus free:
"I love my love, because I know
My love loves me."

TWO MEN

The point of this little poem is, of course, as old as the oldest of lessons which knowledge teaches man. The first thing any man can have realised was that death levelled all worldly distinctions. The writer of the poem is Charles Noble Gregory.

One was a king, and wide domain
He ruled as his sires had done;
A wooden hovel, a bed of pain
Belonged to the other one.

The king was ill and the world was sad—
But the monarch languished, the monarch died;
The beggar was sick unto death, but he had
No one to watch at his low bedside.

Then under the minster the king was laid,
While o'er him the marbles were piled;
But a shallow grave in the fields was made,
By careless hands, for poverty's child.

But now there are those who profoundly declare
If you opened the tomb and the grave,
You could not distinguish, whatever your care,
The dust of the king and the slave.

WHY IT WAS COLD IN MAY

This pleasant little piece of fanciful verse about the days was written by an American lady named Henrietta Robins Eliot.

The Year had all the Days in charge,
And promised them that they
Should each one see the World in turn,
But ten Days ran away!
Ten Days that should have gone abroad
Some time in early May;
So when May came, and all was fair,
These Days were sent to bed,
And ten *good* Winter Days were sent
To see the World instead!

THE POET AND THE BIRD

Elizabeth Barrett Browning, one of the greatest of women-poets, points a moral in this little fable. The natural music of the singing birds is among the rarest delights of our senses, and one of the loveliest things in Nature, but the song of the poet springs from the depths of the heart, and endures for ever, whereas the song of a bird is of the things that perish.

Said a people to a poet: "Go out from among us straightway!
While we are thinking earthly things, thou singest of divine.
There's a little, fair, brown nightingale who, sitting in the gateway,
Makes fitter music to our ear than any song of thine!"

The poet went out weeping—the nightingale ceased chanting:
"Now, wherefore, oh, thou nightingale, is all thy sweetness done?"
"I cannot sing my earthly things, the heavenly poet wanting,
Whose highest harmony includes the lowest under sun."

The poet went out weeping, and died abroad, bereft there;
The bird flew to his grove, and died amid a thousand wails!
Yet when I last came by the place, I swear the music left there
Was only of the poet's song, and not the nightingale's!

"Out of the uncharted, unthinkable dark we came,
And in a little time we shall return again
Into the vast, unanswering dark."

WHAT DOES IT MATTER?

The writer of the following lines voices an eloquent plea for good conduct, and reminds us that it is not by what we inherit or what we acquire of wealth, not by our seeming success or failure that we are to be judged, but by what we think and do and our efforts to lead an upright and useful life.

It matters little where I was born,
Or if my parents were rich or poor,
Whether they shrank from the cold world's scorn
Or walked in the pride of wealth secure;
But whether I live an honest man,
And hold my integrity firm in my clutch,
I tell you, my brother, as plain as I can,
It matters much!

It matters little how long I stay
In a world of sorrow, sin, and care;
Whether in youth I am called away,
Or live till my bones of flesh are bare;
But whether I do the best I can
To soften the weight of adversity's touch
On the faded cheek of my fellow-man,
It matters much!

It matters little where be my grave,
If on the land, or in the sea;
By purling brook, 'neath stormy wave,
It matters little or nought to me;
But whether the angel of death comes down
And marks my brow with a loving touch,
As one that shall wear the victor's crown,
It matters much!

TO A SKYLARK

We have already read, **in our book,** Wordsworth's poem, "To the Skylark," and here is another poem by the same writer, in which he expresses not the general feelings of a poet awakened by the skylark's song, but recalls the emotion of some particular occasion when he had listened to a skylark. It is interesting and instructive to notice this difference between the poet's addressing "The Skylark" and "A Skylark," for a very important distinction is here observed.

UP with me! up with me into the clouds!
For thy song, Lark, is strong;
Up with me! up with me into the clouds!
Singing, singing.
With clouds and sky about thee ringing,
Lift me, guide me, till I find
That spot which seems so to thy mind!

I have walked through wildernesses dreary,
And to-day my heart is weary;
Had I now the wings of a faery,
Up to thee would I fly.
There's madness about thee, and joy divine
In that song of thine;
Lift me, guide me high, and high,
To thy banqueting-place in the sky.

Joyous as morning,
Thou art laughing and scorning;
Thou hast a nest for thy love and thy rest,
And, though little troubled with sloth,
Drunken Lark! thou wouldst be loth
To be such a traveller as I.
Happy, happy liver,
With a soul as strong as a mountain river,
Pouring out praise to the Almighty Giver!
Joy and jollity be with us both!

Alas! My journey, rugged and uneven,
Through prickly moors or dusty ways must wind;
But, hearing thee, or others of thy kind,
As full of gladness and as free of heaven,
I, with my fate contented, will plod on,
And hope for higher raptures, when life's day is done.

RAIN ON THE ROOF

The author of this familiar poem was Coates Kinney, an American writer, well known in his day, who was born in 1826. He was a newspaper editor, and he wrote many poems, but he is best known by this very charming lyric. It cannot be said that he has chosen the best metre, though it does in a way suggest the gentle patter of the rain. The matter of the poem, however, is admirable, as he has seized upon a very familiar experience of Nature and conveyed it truthfully. The falling of rain while we lie abed in a little country cottage has a soothing effect on the mind, and awakens, in some strange way, the tenderest emotions of the heart.

WHEN the humid shadows hover
Over all the starry spheres,
And the melancholy darkness
Gently weeps in rainy tears:
What a joy to press the pillow
Of a cottage-chamber bed,
And to listen to the patter
Of the soft rain overhead!

Every tinkle on the shingles
Has an echo in the heart,
And a thousand dreamy fancies
Into busy being start;
And a thousand recollections
Weave their air-threads into woof,
As I listen to the patter
Of the rain upon the roof.

Now in memory comes my mother,
As she used in years agone,
To survey her darling dreamers
Ere she left them till the dawn;
Oh, I see her leaning o'er me,
As I list to this refrain
Which is played upon the shingles
By the patter of the rain.

Then my little seraph sister,
With her wings and waving hair,
And her bright-eyed cherub brother—
A serene, angelic pair—
Glide around my wakeful pillow,
With their praise or mild reproof,
As I listen to the murmur
Of the soft rain on the roof.

And another comes to thrill me
With her eyes delicious blue;
And forget I, gazing on her,
That her heart was all untrue.
I remember that I loved her,
As I ne'er may love again,
And my heart's quick pulses vibrate
To the patter of the rain.

Art hath nought of tone or cadence
That can work with such a spell
In the soul's mysterious fountains,
Whence the tears of rapture well,
As that melody of Nature,
That subdued, subduing strain,
Which is played upon the shingles
By the patter of the rain.

NOW THE DAY IS OVER

The Rev. S. Baring-Gould, who is a famous novelist and writer of books of travel, has also given us several hymns which have long been favourites in all the churches. Who has not sung his inspiring "Onward, Christian Soldiers"? As an evening hymn, giving voice to the simple faith of little children, that which we print below is sung in churches every Sunday wherever our language is spoken. Mr. Baring-Gould, who was born on January 28, 1834, has written some fine stories, such as "Mehalah" and "John Herring," but his beautiful hymns may outlast even his fine stories.

NOW the day is over,
Night is drawing nigh;
Shadows of the evening
Fall across the sky.

Now the darkness gathers,
Stars begin to peep;
Birds, and beasts, and flowers,
Soon will be asleep.

Jesu, give the weary
Calm and sweet repose;
With Thy tenderest blessing
May mine eyelids close.

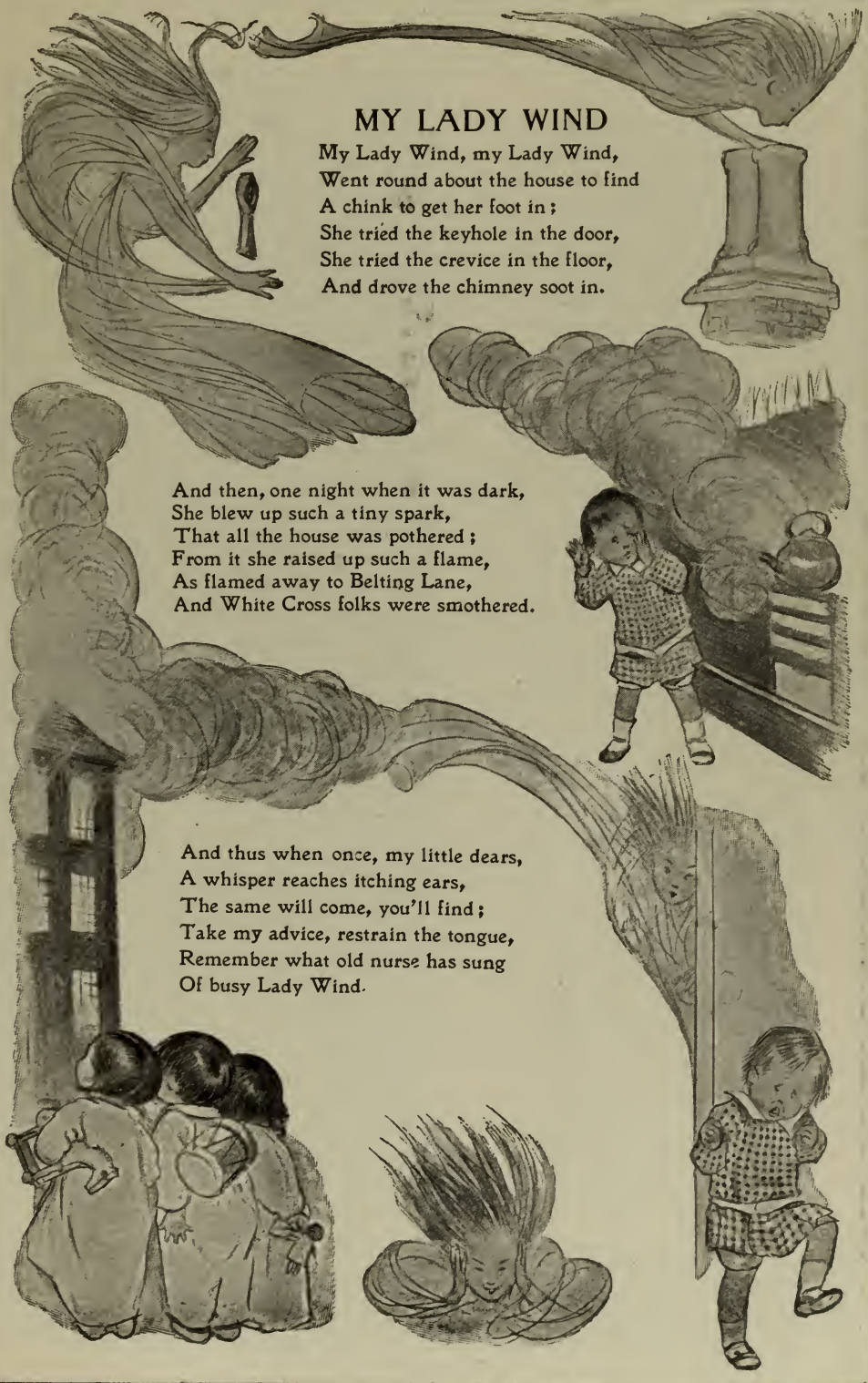
Grant to little children
Visions bright of Thee;
Guard the sailors tossing
On the deep blue sea.

Comfort every sufferer
Watching late in pain;
Those who plan some evil
From their sin restrain.

Through the long night watches,
May Thine angels spread
Their white wings above me,
Watching round my head.

When the morning wakens,
Then may I arise,
Pure and fresh and sinless,
In Thy holy eyes.

Glory to the Father,
Glory to the Son,
And to Thee, Blest Spirit,
While all ages run.



MY LADY WIND

My Lady Wind, my Lady Wind,
Went round about the house to find
A chink to get her foot in;
She tried the keyhole in the door,
She tried the crevice in the floor,
And drove the chimney soot in.

And then, one night when it was dark,
She blew up such a tiny spark,
That all the house was pothered;
From it she raised up such a flame,
As flamed away to Belting Lane,
And White Cross folks were smothered.

And thus when once, my little dears,
A whisper reaches itching ears,
The same will come, you'll find;
Take my advice, restrain the tongue,
Remember what old nurse has sung
Of busy Lady Wind.

TEENY-WEENY

BY THE AUTHOR OF
"WYNKEN, BLYNKEN, AND NOD."

Eugene Field, who wrote this poem and that on the opposite page, was an American author, and one of the kindest-hearted men who ever lived. All the children loved him, and many thousands who only know his poems love him too. He was born in 1850 and died at the end of 1895. His life, which was all too short, was chiefly spent as a busy writer in the Chicago newspapers, but he made his name immortal by his many poems for and about children. No one has excelled him in his work.

EVERY evening, after tea,
Teeny-Weeny comes to me,
And, astride my willing knee,
Plies his lash and rides away;
Though that palfrey, all too spare,
Finds his burden hard to bear
Teeny-Weeny doesn't care;
He commands, and I obey

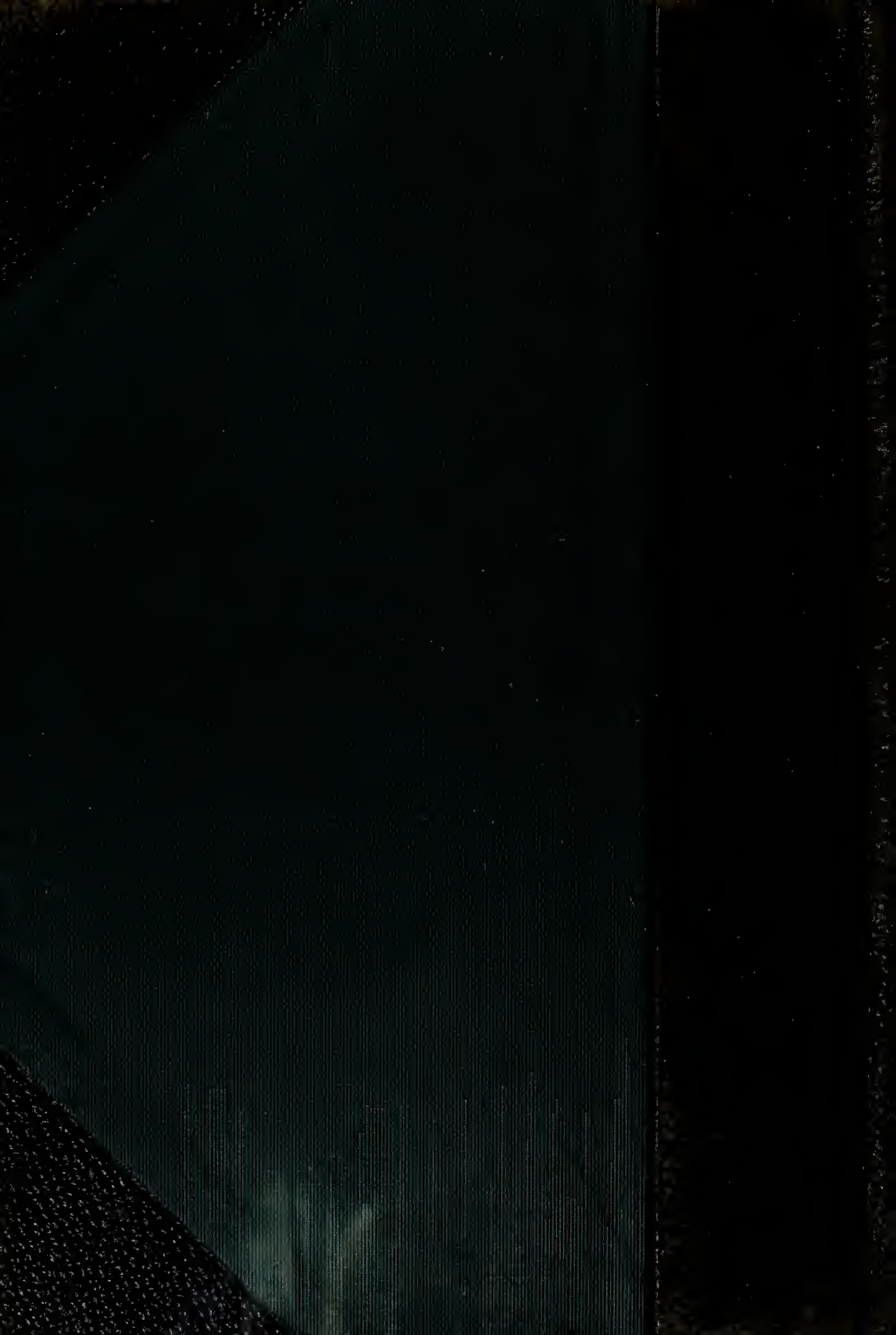
First it's trot, and gallop then;
Now it's back to trot again;
Teeny-Weeny likes it when
He is riding fierce and fast.
Then his dark eyes brighter grow
And his cheeks are all aglow:
"More!" he cries, and never "Whoa!"
Till the horse breaks down at last.

Oh, the strange and lovely sights
Teeny-Weeny sees of nights,
As he makes those famous flights
On that wondrous horse of his!
Oftentimes, before he knows,
Wearylike his eyelids close,
And, still smiling, off he goes
Where the land of By-low is.

There he sees the folk of fay
Hard at ring-a-rosie play,
And he hears those fairies say:
"Come, let's chase him to and fro!"
But, with a defiant shout,
Teeny puts that host to rout;
Of this tale I make no doubt,
Every night he tells it so.

So I feel a tender pride
In my boy who dares to ride
That fierce horse of his astride,
Off into those misty lands;
And, as on my breast he lies,
Dreaming in that wondrous wise,
I caress his folded eyes.
Pat his little dimpled hands.

On a time he went away,
Just a little while to stay,
And I'm not ashamed to say
I was very lonely then;
Life without him was so sad,
You can fancy I was glad
And made merry when I had
Teeny-Weeny back again.

So of evenings, after tea,
When he toddles up to me
And goes tugging at my knee,
You should hear his palfrey neigh!
You should see him prance and shy
When, with an exulting cry,
Teeny-Weeny, vaulting high,
Plies his lash and rides away!

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